A Risk and Protective Factors Framework for Indian Army Soldier's Subjective and Psychological Well-being

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Doctor of Philosophy

By

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Declaration

I, Ms. Shivali Kashyap, declare that the work contained in this thesis titled "A Risk and Protective Factors Framework for Indian Army Soldier's Subjective and Psychological Well-being", has been carried out by me under the supervision of Dr.Dilwar Hussain, Associate Professor (Psychology), Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati (IITG). Abiding by the formal practice of reporting observations, due acknowledgements have been made for the citations of other investigations and the sources of secondary data. This work has not been submitted elsewhere for the award of any degree or diploma.

Guwahati

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Certificate

This is to certify that the work contained in the thesis entitled "A Risk and Protective Factors Framework for Indian Army Soldier's Subjective and Psychological Well-being", by Ms. Shivali Kashyap (Roll No. 146141023), a student of the Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati (IITG), for the award of the degree of Doctor of Philosophy was carried out under my supervision. The findings of this research have not been submitted to any other university or institute for the award of any degree or diploma.

Guwahati

Date: October, 2020

Dr. Dilwar Hussain

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Acknowledgements

Being an Army kid I have been privy to the trials and tribulations of Army life ever since my birth. My father was away on duty and my mother was alone when I came into this world. He saw me for the first time when I was about two months old. During my childhood my father's long absences from our home and my life used to agitate my tiny mind. I used to wonder whether my father too missed me like I used to miss him. Gradually when I grew up and became familiar with my father's life in Army I started marvelling at the way he, and the others in his unit, used to go about their life in a gung ho manner despite all the odds in their life.

What is it that keeps uniformed people going despite harsh and tough service conditions? Is it love of the Nation or the compulsions of earning a livelihood for self and the family which keeps them alert and performing under adverse conditions? Do they ever regret having joined forces when they are unable to be with their families when they need them the most? These, and such other questions, have always agitated my mind during my growing up years. My thesis, in fact, is an attempt to understand and know the answer to all these questions.

I am grateful to my guide, Dr. Dilwar Hussain, for his constant encouragement and support during this period. He has been like a beacon of light to me during this entire journey. He has guided me, both professionally as well as personally, during my difficult times. I have grown tremendously as a person under his benign patronage.

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Abstract

Army is a difficult profession which demands a great deal of physical, moral and mental strength of a person. They experience frequent and diverse occupational stressors such as separation from family members, adverse climatic conditions, isolation, unknown enemy in counter insurgency areas, uncertainty of life, difficult living conditions, fatigue, lack of control at work, role conflict and so on. Apart from these, stress can precipitate psychiatric illnesses like depression, anxiety, insanity, and alcohol and drug abuse. These stressors may adversely affect the well-being (both subjective and psychological well-being) of soldiers. However, a negligible amount of empirical research addressing occupational stress and well-being of Indian Army soldiers is available. Therefore, this thesis aimed to explore following objectives-

(1) To develop and validate a scale to measure occupational stress among soldiers of Indian Army.

(2) To identify and explore the role of significant risk and protective factors in the well-being of soldiers

(3) To understand the interaction effects of both risk and protective factors in influencing the well-being of soldiers

Risk factors included in the study are social isolation, occupational stress and death anxiety. Protective factors included are personality, resilience, leadership and group cohesion. Two studies were planned to address these objectives. Study 1 aimed at development and validation of occupational Stress Scale for soldiers (OSSS) to identify major occupational stressors experienced by soldiers. Study 2 aimed at understanding how risk and protective factors independently as well as interact to influence subjective and psychological well-being.

As an outcome of study 1, occupational Stress Scale for soldiers was developed with 37 items and four factors namely, job related stressors, individual/personal stressors, administrative stressors and group/team stressors. The scale showed acceptable reliability and validity measures.

In the study 2, path analysis was conducted to explore the role of risk and protective factors on subjective and psychological well-being. Results revealed significant risk and protective factors of soldier's subjective and psychological well-being. Among the risk factors, death anxiety negatively predicted subjective well-being (SWB). However, death anxiety positively predicted overall psychological well-being (PWB). Among the occupational stress dimensions, only group stressors predicted significantly (negatively) both the subjective and psychological well-being dimensions. Job related and individual stressors significantly (negatively) predicted only psychological well-being. However, administrative stressors significantly (negatively) predicted only subjective well-being. Similarly, social isolation significantly (negatively) predicted both the subjective and psychological well-being dimensions. The analysis of the protective factors model showed that among the personality factors, only Agreeableness, Conscientiousness, Openness to experience and Emotional stability significantly (positively) predicted PWB. However, Conscientiousness also significantly (positively) predicted SWB. The personality dimension of Extroversion negatively predicted SWB. In terms of Group cohesiveness, a group climate that is engaging has been found to be very highly significantly and positively predictive of both SWB and PWB. Avoidance of certain group members also significantly and a positively predicted SWB. A conflicting group climate on the other hand, very significantly (negatively) predicted PWB. Leadership (quality of leader-follower relationship) and resilience significantly predicted (positively) SWB. The analysis of the interaction or moderator factors model revealed the presence of four significant relationships which are: 1. Group engagement reduces the negative impact of

social isolation on SWB. 2. Resilience reduces the negative impact of death anxiety on SWB. 3. Leadership helps to reduce the negative effect of death anxiety on SWB. 4. Engaging in a group reduces the negative impact of occupational stress on SWB.

Synopsis

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Introduction

Indian Army is the land based largest component of Indian Armed Forces. Commanded by Chief of Army Staff (COAS) holding a General's rank, it has President of India as the Supreme Commander. Army's primary role is to preserve national interests and safeguard the sovereignty, territorial integrity and unity of India against any external threats by deterrence or by waging war.

The secondary role of the Army is to assist Government agencies to cope with proxy war and other internal threats and provide aid to civil authority when requisitioned for the purpose. Apart from this Army also conducts humanitarian rescue operations during natural calamities like floods and earthquakes and such other disturbances. When required it may also be called by Government to cope up with internal threats, for example, Maoist threat and insurgency in North East, Jammu & Kashmir and so on. Along with the sister forces, that is, Indian Air Force and Indian Navy it also actively participates in United Nations peace keeping missions in various parts of the world as and when required. Soldiering is a full time job. All ranks in Army stay together in their Unit or with their families in Cantonment, whenever allowed. The entire life of all ranks revolve around a regimented system which has been put in place to ensure that a soldier is insulated from all the negative influences prevalent in the civil society and he remains conscious and focused on his good conduct expected from a soldier. Hence personal and professional lives of a soldier are intricately intertwined.

Army is a difficult profession which demands a great deal of physical, moral and mental strength of a person. Narang and Sharma (2014) conducted a study with an objective to explore the occupational stressors and its consequences among Indian army soldiers. The study identified 'lack of control at work' as the strongest stressor, followed by 'role conflict', 'inadequate awareness about profession', 'workload and job pressure', 'indifferent organizational attitude', 'unsupportive colleagues', 'inadequate training', 'role ambiguity' and 'ineffective leadership style'. Also, 'lack of operational freedom' and 'workload' contributed the most towards occupational stress; 'combat stressors' were the strongest army-specific stressor influencing army occupational stress; and home stress generated average/normal influence on occupational stress. Pfanz and Ogle (2006) have observed that stress levels due to routine military work have a significant negative impact on

the mental health of the military personnel. It is important to note that there is a rising trend of psychiatric illnesses in our country over the last few decades. Armed Forces personnel being drawn from the same society are not immune to unique operational and environmental stresses, which are resulting in increasing incidences of psychiatric disturbances (Kumar, 2010).

Through the present study, the aim would be to shed light on the current levels of well-being experienced by the Indian Army Soldier in peace areas in relation to variables that play an important role in military life like social isolation, occupational stress, death anxiety, personality, resilience, leadership, unit (group) cohesiveness, subjective well-being and psychological well-being. This segment of population has been rarely studied as far as mainstream research is concerned. A big reason for that is the logistical issue surrounding this population with them being constantly in and out of combat zones on a rotational basis along with a tendency of not acknowledging or reporting such problems while on duty (Hoge et al., 2004).

Research Objectives

This thesis aimed to explore following objectives-

(1) To develop and validate a scale to measure occupational stress among soldiers of Indian Army.

(2) To identify and explore the role of significant risk and protective factors in the well-being of soldiers

(3) To understand the interaction effects of both risk and protective factors in influencing the well-being of soldiers

In order to explore above mentioned objectives, two quantitative studies were conducted as part of the thesis. Study 1 focuses on the development and validation of an Occupational Stress Scale for Soldiers (OSSS). The rationale behind the study is majorly two fold. The first reason being that this population has not been explored as far as occupational stress is concerned even though few studies do exist to confirm its presence in the life of military personnel. The second reason is that many scales exist to measure occupational stress in the civilian population but since the job and serving conditions are very different in the armed forces, those scales may not be appropriate for this sample. Thus a specialized instrument to measure occupational stress in this population is required.

Study 2 focuses on the testing of the three proposed theoretical models of soldier well-being including a risk factors model, protective factors model and a moderator factors model where protective factors are conceptualized as moderators between risk factors and well-being measures. The risk factors included social isolation, death anxiety, and occupational stress. The protective factors included personality, leadership, resilience and unit cohesion. The impact of these variables on subjective and psychological well-being was explored. These models will provide insights into the dynamics of well-being in the life of soldiers. There are presently no such empirical studies in the context of Indian soldiers' that gives a clear perspective and an insight about the factors that are affecting the well-being of the soldiers. The relevance of this study lies in its contribution not just to theoretical understanding of the armed forces for the purpose of research but also in formulating policies for the benefit of this section of the society.

Study 1: Development and validation of Occupational Stress Scale for Soldiers (OSSS)

A mixed method research design was employed with both quantitative and qualitative approaches in this study. Since the prime focus of this study was to develop and validate an assessment instrument to measure the occupational stress levels in the soldiers, it was pertinent to identify the key dimensions of occupational stress in military life. This aspect remains unexplored in the current literature and thus inputs from experts with long careers in the military were incorporated during the scale construction process. This qualitative approach was later supplemented with a quantitative one during the process of measurement of the construct. Thus, a research design that could accommodate both these approaches was important for the fulfilment of this research objective.

This study (scale development) included the following phases-

Phase 1: Defining the construct and item generation

The scale development process started with gaining clarity about, "what is to be measured?" This leads the researcher to first define the construct to state exactly what is included in the definition and what is excluded (Hinkin, Tracey, & Enz, 1997). This leads the researcher to think clearly about the content of the scale (Slavek & Drnovsek, 2012). According to Hinkin, Tracey and Enz (1997), not only defining the construct is important but also determining how many dimensions it has. He suggests that the most common way to unveil the dimensionality of a construct is through a literature review. In our research the construct to be defined was *occupational stress of soldiers*. It has been discussed in detail in the review of literature section along with the dimensions

proposed by various researchers. Some items were generated based on the review of literature. Since there is not enough literature on what actually constitutes as occupational stress in terms of the military prospect, hence understanding the view point of the Army personnel was important. For this reason, telephonic interviews and email communications were made with 20 high ranking officers in the Army (ranks of Brigadier and above) who have served in commanding positions for 25-30 years. Because of their close ties with the soldiers in their commands/units they were able to provide valuable feedback in this regard. Qualitative interviews with these senior Army officers were considered best for exploring the understanding of a soldier's life as they themselves have experienced all the phases of a soldier's life. These interviews served as the basis for generating initial list of items for the scale. Finally, in total 40 items were generated by carefully considering the literature and the feedback from the senior Army officers.

Phase 2: Initial item purification

The main objective of the item purification or reduction step was to review and refine the generated items to enhance the content and face validity of the scale. In this phase, the experts were asked to assess the items on three criteria a) the relevance of each item to the construct b) the need for a change in the wording of the items c) whether an item qualifies to be eliminated for some reason.

As a result of this exercise, 3 items were deleted because of their similarity with the existing items. The scale was constituted on a Likert scale format with ratings from 0 (Does not apply to me at all), 1(Applies to me to some degree or some of the time), 2 (Applies to me to a considerable degree or a good part of the time) and 3 (Applies to me very much or most of the time). Out of the 37 items, 23 were positive and 14 were negative items.

Phase 3: Exploratory Factor Analysis (EFA)

EFA allows the investigator to explore the most prominent variables to create a theory, or model from a large set of latent dimensions that are often represented by a set of items (Pett, Lackey et al. 2003; Swisher, Beckstead et al. 2004; Thompson 2004; Henson and Roberts 2006). EFA is essentially suitable for development of scales and is applied when there is little theoretical basis for specifying in advance the number and patterns of common factors (Hurley, Scandura et al.; Hayton, Allen et al. 2004).

EFA was conducted on the 37 items of OSSS generated in the phase 2. The data was collected from the 350 soldiers from all the commands of the Indian Army namely Northern, Southern, South western, Eastern, Western and Central commands.

The results indicated the KMO measure of sample adequacy value of 0.78 and a significant result of the Bartlett's Test of Sphericity (indicating that the matrix is not an identity matrix). The factor loadings ranged from 0.67 to 0.75 that is within the acceptable limits.

After applying Principal Component Analysis as the extraction method and Varimax with Kaiser Normalization as the rotation method, four major stress factors with the cumulative variance of 62.55 % emerged in the EFA. They are-

(1) Job related stressors (13 items),

(2) Individual/Personal stressors (10 items),

(3) Administrative stressors (8 items) and

(4) Group/Team related stressors (6 items).

The job related stressors include such stimuli that are inherent in the characteristics of the job itself, which might lead to stress in the soldiers. Individual/personal stressors deal with those factors that

are personal or exclusive to the soldier experiencing them due to their own perception about life and job. Administrative stressors are those factors that may potentially cause stress to the soldiers due to the working of the administrative authority in the Army. Finally, the group/team stressors are the factors within the group/team of colleagues that can create stress in the life of the soldier.

Phase 4: Confirmatory Factor Analysis (CFA)

The purpose of EFA is to identify the factor structure or model for a set of variables. Hence it is considered as more of a theory-testing procedure (Stevens, 2012). On the other hand, Confirmatory Factor Analysis (CFA) is a means to validate the results obtained from EFA and to test their replicability (Hair et al., 2006). In EFA, the factors are derived from statistical results. The statistical method determines the number of factors and loadings (Hair, Ringle, & Sarstedt, 2012). On the other hand, in CFA, the number of factors and variables making up those factors are specified before carrying out the analysis. Thus, the role of CFA statistics is to suggest how well the specification of the factors matches reality (actual data) (Hair, Ringle, & Sarstedt, 2012). CFA is commonly used for establishing the validity of a single factor model, test the significance of a specific factor loading, test whether a set of factors are correlated or uncorrelated and assess the convergent and discriminant validity of a set of measures (DeCoster, 1998). In CFA, several statistical tests are used to determine how well the model fits to the data (Suhr, 2006). A "good model fit" indicates that the model is plausible (Schermelleh-Engel, Moosbrugger, & Müller, 2003).

In this phase also the data was collected from the 350 soldiers from all the commands of the Indian Army for conducting CFA. Various model fit indices such as Chi-square/df, GFI, CFI, NFI, SRMR, RMSEA and P close had acceptable values indicating satisfactory factor structure.

The scale showed decent reliability and validity measures as well. Two reliability measures were calculated: Cronbach's alpha coefficient and composite reliability. The Cronbach's alpha coefficient for the total scale is 0.74 with total item correlations ranging from 0.55 to 0.67. The dimension wise values of Cronbach alpha range from 0.70 to 0.77. The composite reliability measure is computed from the squared sum of factor loadings and the sum of the error variance. Like Cronbach's alpha, the ideal estimate value is 0.70 or greater to provide sufficient evidence of reliability. The composite reliability estimate is 0.76 for these scale items with the dimension wise values ranging from 0.71 to 0.83.

The convergent validity the scale was established by the following criteria (1) Factor loadings 0.7 and above (2) Average variance extracted (AVE) should be greater than 0.5 and (3) reliability measures should exceed 0.7. All these criteria were fulfilled for the scale thereby indicating sufficient convergent validity.

The final step was to assess the discriminant validity of the scale which is represented as the Maximum Shared Variance (MSV). Discriminant validity is demonstrated by evidence that measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be highly correlated to each other (Hubley, 2014). Two criteria need to be fulfilled to establish the discriminant validity of the scale which are- (1) MSV<AVE and (2) Square root of AVE (Average Variance Extracted) should be greater than inter-construct correlations (Hair et al.,2010). The MSV value of our scale is 0.33 which is less than the AVE value of 0.52. The inter-

construct correlations range between 0.36 to 0.49 which are less than the square root of AVE, that is, 0.72. Both the criteria were met for the scale indicating sufficient discriminant validity.

As the occupational stress scale of soldiers (OSSS) was found to be sufficiently reliable and valid, it was used in the second study as one of the measure for testing theoretical models of the study.

Study 2: Test of proposed theoretical models of soldier well-being

The second study was aimed at understanding risk and protective factors for soldier's subjective and psychological well-being. Three theoretical models were proposed based on the literature review and tested in this study.

Proposed Theoretical Models

The above research questions and hypotheses were addressed by testing three theoretical models namely-

(1) Risk factors model of soldier well-being

(2) Protective factors model of soldier well-being and

(3) Moderated models of soldier well-being (Protective factors as moderators between the risk factors and well-being measures)

Risk Factors Model

This model proposes to identify the potential risk factors to a soldier's well-being. The variables of social isolation, occupational stress and death anxiety were included in this model as independent variables. The effect of these on the subjective and psychological well-being of the soldiers were studied making them the dependent variables in this model. In general, the literature shows that social isolation, occupational stress and death anxiety have a negative impact on the well-being levels in different populations. For example, social isolation has been associated with increased risk of depressive symptoms, suicide attempts, and low self-esteem in young people (Hall-Lande et al., 2007). Occupational stress can manifest itself as psychological distress, depression, anxiousness, passiveness/ aggressiveness, boredom, loss of self-confidence and esteem, loss of concentration, feelings of futility, impulsiveness, disregarding of social norms and values, dissatisfaction with job and life, losing contact with reality, and emotional fatigue (Vokic & Bogdanic, 2007). The times of heightened stress or threats to the health of self or loved ones can result in inefficient and pathological modes of coping in some cases (Kastenbaum, 2000; Yalom, 1980; Yalom 2008). Due to this death anxiety is considered to be a basic fear underlying the development and maintenance of various psychological conditions (Vess & Arndt, 2008; Furer & Walker, 2008; Strachan et al., 2007).

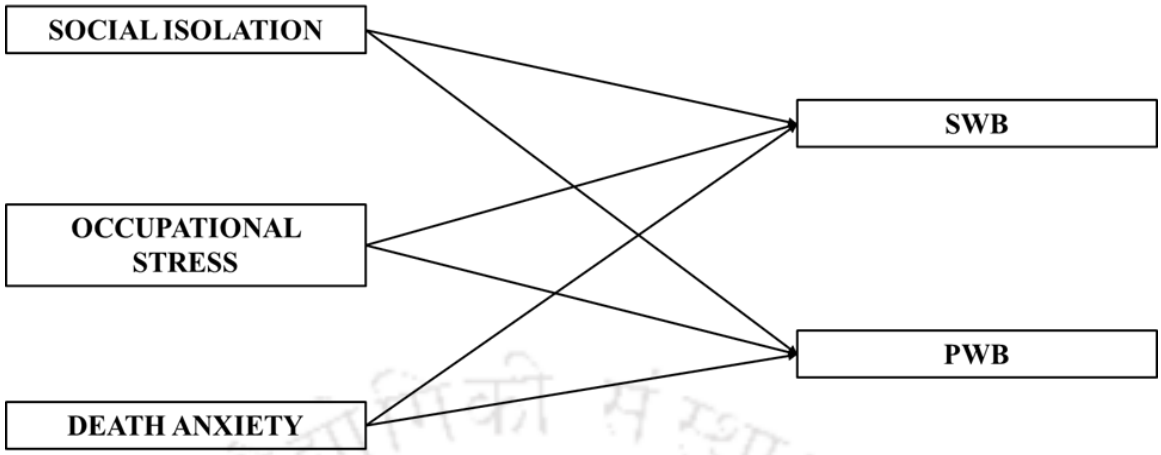

Fig 1. Risk factors model

Protective Factors Model

This model proposes to identify the potential protective factors to a soldier's well-being. The variables of personality, resilience, leadership and group cohesion were included in this category as the independent variables. The effect of these on the subjective and psychological well-being of the soldiers were studied making them the dependent variables in this study. People with different personality traits tend to experience different degrees of subjective well-being. Individuals who are more extraverted, agreeable, conscientious, and emotionally stable tend to experience greater satisfaction with life, more frequent positive affect, and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). Scholtz (2003) reported that personality factors such as conscientiousness and neuroticism were significantly correlated with PWB and that both PWB and personality measures had a significant relationship with interpersonal and organizational deviance in Canadian Forces. The second potential protective factor of resilience was found to be positively correlated with dispositional resilience (measured using the three factors of commitment, control, and challenge) and PWB, except for the dimension

of autonomy (Picardi et al., 2012). The results of a study by Sagone and Caroli (2013) showed positive relationships between Psychological well-being (environmental mastery, personal growth, and self-acceptance) and resilience. Resilience has also been found to be negatively correlated with poor mental and physical health conditions, such as increased depressive symptomatology, post-traumatic stress disorder, and physical disability (Burns & Anstey, 2010; Connor, Davidson, & Lee, 2003; Hardy et al., 2004; Mehta et al., 2008). Research on leadership has found that destructive leadership was associated with lower well-being, increased stress, and poorer performance among followers (Schyns & Schilling, 2013). The final factor of unit cohesion has been established as a protective factor in cases of post-traumatic stress disorder (PTSD), common mental disorder and physical ill health when it comes to military personnel (Oliver et al., 1999; Brailey et al, 2007; Manning, & Fullerton, 1988).

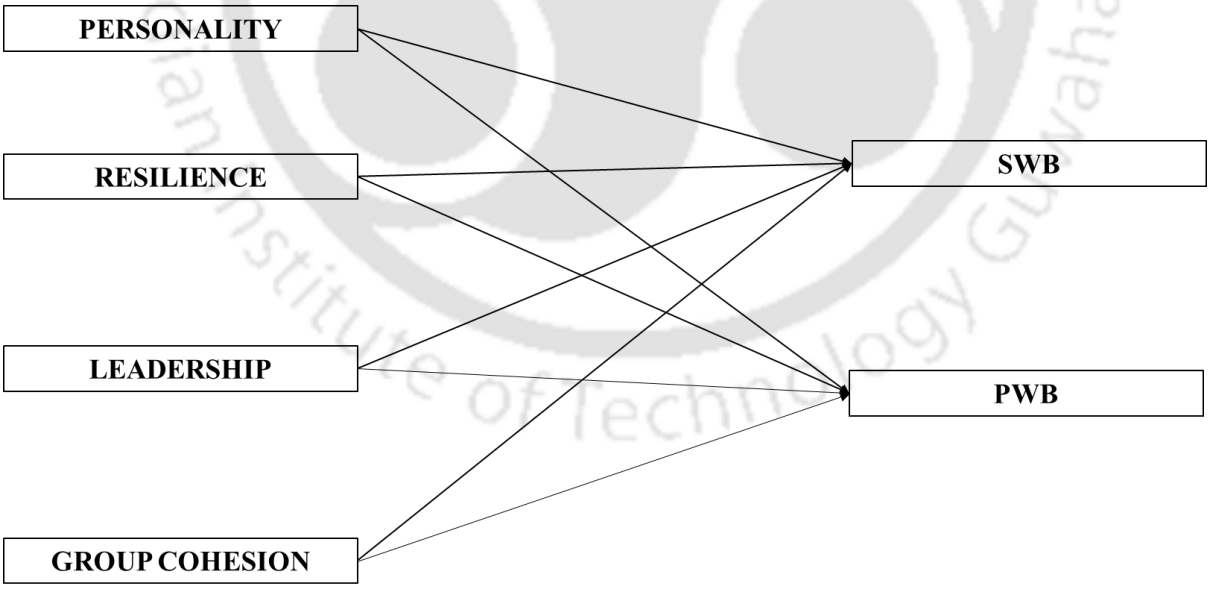

Fig 2. Protective factors model

Moderator Factors Model

This model aims to understand whether the protective factors of resilience, leadership and group cohesion play a moderating role when it comes to the relationship between the risk factors (social isolation, occupational stress and death anxiety) and subjective and psychological well-being. The model that served as a foundation for the construction of the moderator factor model was the "Soldier Emotional Well-being Model" by Bliese and Castro in 2003.

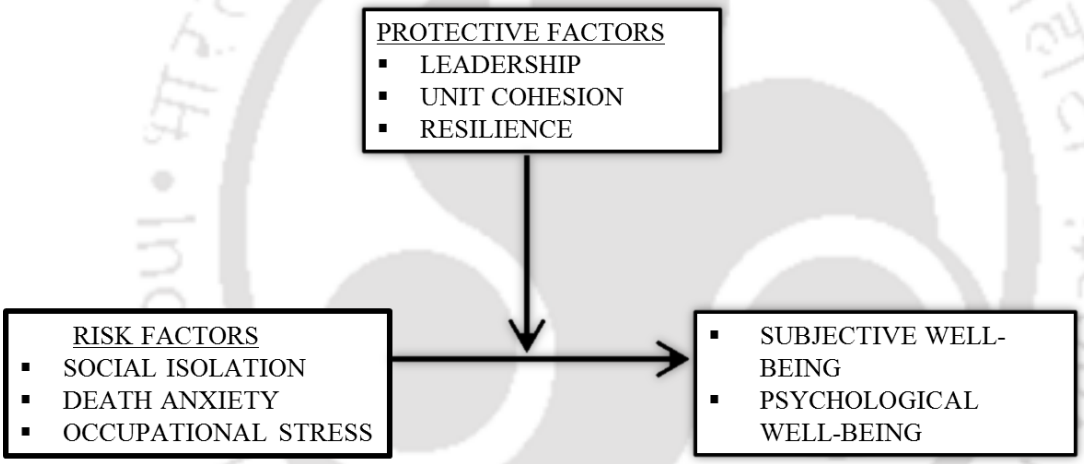

Fig 3. Moderator factors model

Research Questions and Hypotheses

The following research questions and hypotheses were tested in this study:

1. Do social isolation, occupational stress and death anxiety act as risk factors in the context of an Indian soldier's subjective well-being (SWB) and psychological well-being (PWB)?

H1: Social isolation will negatively impact both SWB and PWB.

H2: Occupational stress will negatively impact both SWB and PWB.

H3: Death anxiety will negatively impact both SWB and PWB.

2.Do factors like personality, leadership, unit cohesion and resilience act as protective factors in the context of an Indian soldier's Subjective and Psychological well-being?

H4: Personality traits will impact both SWB and PWB.

H5: Resilience will positively impact both SWB and PWB.

H6: The quality of leader-follower relationship will positively impact both SWB and PWB.

H7: Group cohesion will impact both SWB and PWB.

3.In what ways do some protective factors (leadership, unit cohesion and resilience) mitigate the effects of the risk factors (social isolation, occupational stress and death anxiety) on the Subjective and Psychological well-being of an Indian soldier?

H8: Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H9: The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H10: Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

Results

A sample of 700 soldiers from all the commands of the Indian Army namely Northern, Southern, South western, Eastern, Western and Central commands was used for testing these proposed theoretical models.

Occupational stress level among the soldiers

An analysis of OSSS scale indicated a moderate level of occupational stress reported by the soldiers. The stressors affecting the soldiers in order of magnitude are job related stressors, followed by individual/personal, administrative and group stressors.

The results obtained for the risk, protective and moderator factor models are discussed below.

Risk Factors Model

The analysis in the model suggests a significant negative predictive relationship between death anxiety and subjective well-being. However, interestingly, death anxiety positively predicted psychological well-being. Among the occupational stress dimensions, only *group stressors* predicted significantly (negatively) both the subjective and psychological well-being dimensions. *Job related and individual stressors* significantly (negatively) predicted only psychological well-being. However, *administrative stressors* significanly (negatively) predicted only subjective well-being. Similarly, *social isolation* significantly (negatively) predicted both the subjective and psychological well-being dimensions. Among the control variables, only years of service significantly predicted PWB of the soldiers which is an likely indication of a progressive

detereoration in the well-being levels of the soldiers over time due to the cumulative occupational stress and other risk factors.

Protective Factors Model

The variables of Personality and Group cohesion were analysed in regards to their various dimensions while the other variables were studied as single factors. Among the personality factors, only Agreeableness, Conscientiousness, Openness to experience and Emotional stability significantly (positively) predicted PWB. However, Conscientiousness also significantly (positively) predicted SWB. Interestingly, the personality dimension of Extroversion negatively predicted SWB which is in contrast to the findings of the existing literature on civilian sample. In terms of Group cohesiveness, a group climate that is engaging has been found to be very highly significantly and positively predictive of both SWB and PWB. Avoidance of certain group members is also very highly significantly and a positive predictor of SWB. A conflicting group climate on the other hand, very significantly impacts the soldier in a negative way as far as the PWB is concerned. Leadership (quality of leader-follower relationship) and resilience are very highly positively and significant predictors of SWB Similar to the Risk Factors Model, here also a strong negative predictor relationship can be seen in the number of years spent in the Army and PWB of the soldiers.

Moderator Factors Model

The following pathways were found to be significant after the path analysis.

1. Moderating Role of Group Engagement in the relationship between Social Isolation and SWB: It was found that group engagement dampens the negative relationship between social isolation and SWB after controlling the effects of education, age, rank and experience levels in the sample. In other words, engaging in a group helps to reduce the negative impact of social isolation (perceived loneliness) on SWB of the soldiers.

2. Moderating role of Resilience in the relationship between Death Anxiety and SWB: It was established that resilience dampens the negative relationship between death anxiety and SWB. In other words, resilience helps to reduce the negative impact of death anxiety on SWB of the soldiers.

3. Moderating role of Leadership (quality of leader-member exchange) in the relationship between Death Anxiety and SWB: Leadership dampens the negative relationship between death anxiety and SWB. In other words, leadership helps to reduce the negative effect of death anxiety on SWB of the soldiers.

4. Moderating role of Group Engagement in the relationship between Occupational Stress and SWB: Group engagement dampens the negative relationship between Occupational stress and SWB. In other words, engaging in a group reduces the negative impact of occupational stress on SWB of the soldiers.

Summary results of hypotheses testing

Hypothesis No	Statement	Result
1	Social isolation will negatively impact both SWB and PWB of Indian soldiers.	Accepted
2	Occupational stress will negatively impact both SWB and PWB of Indian soldiers.	Partially accepted
3	Death anxiety will negatively impact both SWB and PWB of Indian soldiers.	Partially accepted
4	Personality traits will impact both SWB and PWB of Indian soldiers.	Partially accepted
5	Resilience will positively impact both SWB and PWB of Indian soldiers.	Partially accepted
6	Quality of leader-follower relationship will positively impact both SWB and PWB of Indian soldiers.	Partially accepted
7	Group cohesion will impact both SWB and PWB of Indian soldiers.	Partially accepted
8	Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted
9	The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted
10	Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted

Conclusion and Contributions

One of the most significant contributions of this thesis is the development and validation of new scale *"Occupational Stress Scale for Soldiers"* (OSSS). This scale can also be used for services other than the Army like Air Force, Navy, Police, BSF, CRPF, ITBP and other paramilitary forces where the serving/job conditions are similar to that of the Army. Furthermore, the factor structure of the scale provides insights into the significant dimensions of occupational stress experienced by the soldiers. Results of the theoretical model testing provide significant insights into the risk, protective and moderator factors for a soldier's subjective and psychological well-being. This is also a novel addition to the literature, as there are negligible empirical studies exploring factors affecting Indian Army soldier's well-being. The implications of these findings lie in them being used for framing ground level policies for the soldiers. The understanding of the risk, protective and moderator factors that are at work in the routine life of a soldier can greatly help in providing the necessary support system to reduce the impact of negative factors and promote the positive ones when it comes to the SWB and PWB of the soldiers.

In a nutshell it can be concluded that both the studies carried out in this research have theoretical and practical applications in understanding a major part of a soldier's life, that is, his life in the military. These studies provide a foundation on which future studies can be based since they provide an important tool (Occupational Stress Scale for Soldiers) and framework (Soldier's Well-being Model) to delve deeper into understanding this population. This will prove to be beneficial not only for the soldiers but the country as a whole because the well-being of the military population has national ramifications.

Contents

Chapters		Page
Chapter 1	**Introduction**…….	1
Chapter 2	**Review of Literature**……	15
2.1	Concept of Well-being…….....	15
2.2	Occupational Stress…….....	18
2.3	Social Isolation……	25
2.4	Death Anxiety…….....	28
2.5	Personality……...	32
2.6	Resilience…….	41
2.7	Leadership……	46
2.8	Unit/Group Cohesion……...	52
Chapter 3	**Proposed Theoretical Models and Hypotheses**.....	58
3.1	Introduction……...	58
3.2	Risk Factors Model……...	58
3.3	Protective Factors Model…….....	61
3.4	Moderator Factors Model……	64
Chapter 4	**Development and Preliminary Validation of Occupational Stress Scale for Soldiers (Study 1)**…….....	66
4.1	Introduction…….....	66
4.2	Research Design…….....	67
4.3	Defining the construct and item generation……	71

4.4 Initial item purification……. 73
4.5 Exploratory Factor Analysis……. 76
4.5.1 Background……. 76
4.6 Method…… 80
4.6.1 Data collection and Procedure…… 80
4.6.2 Participants……..... 81
4.7 Results……..... 83
4.7.1 Assumptions testing……. 83
4.7.2 Factor structure……. 84
4.8 Confirmatory Factor Analysis……. 87
4.8.1 Background……. 87
4.8.2 Fit Indices……. 88
4.8.3 Parameter Estimates……. 90
4.8.4 Modification Indices…… 90
4.8.5 Model Re-specification…… 91
4.8.6 Scale validity……. 91
4.9 Method…….. 92
4.9.1 Participants…….. 92
4.10 Results……... 94
4.11 Validity testing…….. 96

Chapter 5 Test of Proposed Theoretical Models for Soldier Well-being (Study 2)…….. 100

5.1 Introduction…….. 100
5.2 Research Questions…….... 103
5.3 Hypotheses…….. 104

5.4 Method…… 105
5.4.1 Data collection and Procedure…….. 105
5.4.2 Participants……..... 106
5.4.3 Measures used for data collection……. 107
5.5 Results……..... 117
5.5.1 Descriptive statistics……..... 117
5.5.2 Exploratory Factor Analysis of all scales……..... 119
5.5.3 Confirmatory Factor Analysis of all scales……... 121
5.6 Structural Equation Modeling…….. 125
5.7 Path Analysis of theoretical models…… 128
5.7.1 Results of the Risk Factors Model……..... 128
5.7.2 Results of the Protective Factors Model……... 133
5.7.3 Results of the Moderated Path Model…….. 138
5.8 Summary of Hypotheses Testing Results……..... 153

Chapter 6 Discussion of Results..... 155
6.1 Development and Validation of Occupational Stress Scale for Soldiers…… 155
6.2 Risk factors for Indian soldier's SWB and PWB……..... 158
6.3 Protective factors for Indian soldier's SWB and PWB…… 161
6.4 Moderator factors for Indian soldier's SWB and PWB…… 165
6.5 Contributions, context specific novel findings and implications.. 168
6.6 Limitations of the research…… 172
6.7 Future directions……..... 173

References…… 174
Appendix…….. 236

List of Tables

Table No. & Title	Page
Chapter 4	
Table 4.1 Scale items subjected to EFA……..	74
Table 4.2 Age details of participants for EFA (Study 1)…….	81
Table 4.3 Educational details of participants for EFA (Study 1)…….	82
Table 4.4 Years of service details of participants for EFA (Study 1)….....	82
Table 4.5 Rank details of participants for EFA (Study 1)……	82
Table 4.6 Factor extraction using Principal component analysis and Varimax rotation……	85
Table 4.7 Age details of participants for CFA (Study 1)……..…	92
Table 4.8 Educational details of participants for CFA (Study 1)……...	92
Table 4.9 Years of service details of participants for CFA (Study 1)…….	93
Table 4.10 Rank details of participants for CFA (Study 1)……	93
Table 4.11 Model fit measures of Occupational Stress Scale for Soldiers….	95
Table 4.12 Factor loading range of Occupational Stress Scale dimensions...	96
Table 4.13 Cronbach alpha values of Occupational Stress Scale……...	98
Table 4.14 Composite Reliability values of Occupational Stress Scale…….	98
Chapter 5	
Table 5.1 Age details of participants for Study 2……...	106
Table 5.2 Educational details of participants for Study 2……...	106
Table 5.3 Years of service details of participants for Study 2……	107
Table 5.4 Rank details of participants for Study 2……..	107
Table 5.5 Descriptive statistics of all variables from total sample of 700..	118

Table 5.6 EFA parameters of all scales…….. 120
Table 5.7 Model fit indices of all scales……. 122
Table 5.8 Validity measures of all scales……... 123
Table 5.9 Reliability measures of all scales…… 124
Table 5.10 Standardized Regression weights of Risk Factors Model…… 130
Table 5.11 Model fit measures of Risk Factors Model…… 131
Table 5.12 Standardized Regression weights of Protective Factors Model…. 135
Table 5.13 Model fit measures of Protective Factors Model……... 136
Table 5.14 Standardized Regression weights of Moderated Path Model (I)… 140
Table 5.15 Model fit measures of Moderated Path Model (I).. 141
Table 5.16 Standardized Regression weights of Moderated Path Model (II)… 143
Table 5.17 Model fit measures of Moderated Path Model (II)…….. 144
Table 5.18 Standardized Regression weights of Moderated Path Model (III).. 146
Table 5.19 Model fit measures of Moderated Path Model (III)……. 147
Table 5.20 Standardized Regression weights of Moderated Path Model (IV).. 149
Table 5.21 Model fit measures of Moderated Path Model (IV)…… 150
Table 5.22 Summary of Hypotheses Testing Results…… 153

List of Figures

Figure No. & Title	Page
Chapter 3	
Figure 3.1 Risk Factors Model…….....	60
Figure 3.2 Protective Factors Model…….	63
Figure 3.3 Moderator Factors Model…….	65
Chapter 4	
Figure 4.1 Research design decisions……	71
Chapter 5	
Table 5.1 Risk Factors Model……	101
Table 5.2 Protective Factors Model…….....	102
Table 5.3 Moderator Factors Model……..	103
Table 5.4 Path analysis of the Risk Factors Model……	129
Table 5.5 Path analysis of the Protective Factors Model……..	134
Table 5.6 Moderator Factors Model……..	139
Table 5.7 Relationship between SWB and Social Isolation with Group Engagement as the moderator……...	142
Table 5.8 Relationship between SWB and Death Anxiety with Resilience as the moderator……	145
Table 5.9 Relationship between SWB and Death Anxiety with Leadership as the moderator……...	148
Table 5.10 Relationship between SWB and Occupational Stress with Group Engagement as the moderator……...	151

List of Abbreviations

COAS – Chief of Army Staff

JCO – Junior Commissioned Officer

OR – Other Ranks

Nb/Sub – Naib Subedar

Sub – Subedar

Sub Maj – Subedar Major

L/Nk – Lance Naik

Nk – Naik

Hav – Havaldar

WHO – World Health Organization

SWB – Subjective Well-being

PWB – Psychological Well-being

OSSS – Occupational Stress Scale for Soldiers

PTSD – Post Traumatic Stress Disorder

MM – Mixed Methods

EFA – Exploratory Factor Analysis

CFA – Confirmatory Factor Analysis

KMO – Kaiser Meyer Olkin

PCA – Principal Components Analysis

CMIN/df – Chi-Square/degrees of freedom

GFI – Goodness of Fit Index

SRMR – Standardized Root Mean Square Residual

RMSEA – Root Mean Square Error of Approximation

CFI – Comparative Fit Index

NFI – Normed Fit Index

MI – Modification Indices

AVE – Average Variance Extracted

MSV – Maximum Shared Variance

UCLA – University of California Los Angeles

TIPI – Ten Item Personality Inventory

NEO-PI-R – Neuroticism Extroversion Openness Personality Inventory Revised

FIPI – Five Item Personality Inventory

LMX – Leader Member Exchange

GCQ – Group Climate Questionnaire

SEM – Structural Equation Modeling

Chapter 1

Introduction

Background

Indian Army is the land based largest component of Indian Armed Forces. Commanded by Chief of Army Staff (COAS) holding a General's rank, it has President of India as the Supreme Commander. Army's primary role is to preserve national interests and safeguard the sovereignty, territorial integrity and unity of India against any external threats by deterrence or by waging war. The secondary role of the Army is to assist Government agencies to cope with proxy war and other internal threats and provide aid to civil authority when requisitioned for the purpose. Apart from this Army also conducts humanitarian rescue operations during natural calamities like floods and earthquakes and such other disturbances. When required it may also be called by Government to cope up with internal threats, for example, Maoist threat and insurgency in North East, Jammu & Kashmir and so on. Along with the sister forces, that is, Indian Air Force and Indian Navy it also actively participates in United Nations peace keeping missions in various parts of the world as and when required.

Indian Army has two components namely Arms and Services. Arms is the sword wielding component of the Army and consists mainly of Infantry, Armored, Artillery, Army Air Defence Corps, Corps of Signal and Corps of Engineers to name a few. Services form the logistics branch of Army which provides all the logistical supports to Arms, for example, food, fuel, oil, lubricants, weapons, ammunition, repair, medical aid and so on, to enable them to sustain and fight the enemy.

Services consist of medical branch, Army Supply Corps, Army Ordnance Corps and Corps of Electronic and Mechanical Engineers to name a few.

To perform the assigned tasks Indian Army is structured in a hierarchical manner consisting of three groups namely, Officers, Junior Commissioned Officers (JCO's) and Other Ranks (OR's). Officers are directly commissioned through Union Public Service Commission exams and their rank starts from Lieutenant and moves up to Captain, Major, Lt Colonel, Colonel, Brigadier, Major General, Lt General and goes up to General. JCOs ranks starts with Naib Subedar (Nb/Sub) and goes up to Subedar (Sub) and Subedar Major (Sub Maj). ORs start at soldier's rank and moves up to Lance Naik (L/Nk), Naik (Nk) and goes up to Havaldar (Hav). A soldier may get promoted right up to Subedar Major in the course of his service if he is qualified and found fit as per laid down regulations.

ORs are the main strength of the Indian Army, wielding the sword (a metaphorical expression signifying various kinds of weapons used by the Army) in the battle. JCOs are the junior leaders who train ORs and directly command them in performing the assigned tasks. Junior Officers up to the rank of Major too perform the duties of junior leaders who help train their JCOs and ORs and keep them battle ready at all times. Junior leaders, apart from keeping their troops well trained for operations, are also entrusted with the responsibility of looking after the administration and welfare of the troops under their command.

Since, Junior Officers, JCOs and ORs form the main performing component of the Indian Army, anything which weakens any of these ranks adversely affects the performance of the whole Indian Army as such. Conversely, if these elements are strengthened in whatever manner, Indian Army gets strengthened automatically.

Soldiering is a full time job. All ranks in Army stay together in their Unit or with their families in Cantonment, whenever allowed. The entire life of all ranks revolve around a regimented system which has been put in place to ensure that a soldier is insulated from all the negative influences prevalent in the civil society and he remains conscious and focused on his good conduct expected from a soldier. Hence personal and professional lives of a soldier are intricately intertwined. The only time a soldier is out of this regimented system is when he proceeds on his annual leave for sixty days granted to him once a year. During this period only he can be said to have any personal life as such.

Occupational stress and well-being of soldiers

Army is a difficult profession which demands a great deal of physical, moral and mental strength of a person. Socio-economic factors, coupled with environmental / organizational stress has been going up steadily due to the changes in the responsibilities given to the Army. Maintenance of law and order, which is a Police responsibility, is routinely palmed off to Army by Civic authorities. Such duties disrupt the normal functioning of the administration in Army which adversely affects the welfare of a soldier and adds to his stress levels. Higher technology weapon systems in Army, necessitated higher educational qualifications for a soldier who can understand and operate such systems. But higher educational standards also bring higher ambitions and a desire for a good standard of life in a soldier. Pay and allowances of an Army man has not kept pace with these ambitions and desires resulting in increased stress levels.

Above mentioned factors are contributing to increase in stress levels resulting in disciplinary cases, suicides and fratricides. As per ex-Defence Minister Mr Arun Jaitley's Rajya Sabha address in

2014, there have been 597 suicides in Armed Forces in five years (2009-2013). Out of this 498 were in Army alone. On an average there were around 100 suicides per year in Army alone. In an Army of over a million strength this figure may look small but it's impact on the other soldiers is huge which brings down their morale and vitiates the already tense working environment.

Elaborating on the stress related issues in the Armed Forces, the Standing Committee Report on Defence, in 14th Lok Sabha (2008-2009, p.8) in their note on the subject stated as under:

"*Though the overall psychiatric morbidity in the Armed Forces has been less than the national figures, even a few unusual incidents in the Armed Forces draw excessive media attention. Stress manifests itself in various ways in peacetime and wartime environment and can affect anyone serving at any level. Soldiers engaged in low intensity conflicts over long periods of time are prone to develop psychological problems. The rapid change in society has also led to considerable upheaval in the soldier's life. The change from joint family to the nuclear family system, increasing aspirations for a good quality life and frequent dislocations, long waiting for married accommodation have caused additional stress and strain leading to psychological distress. Response of a soldier to the stress can be positive or negative. Positive responses can be a sense of purpose and mission, pride in uniform, regimental spirit, camaraderie, vigilance, endurance of hardship pain and injury, heroic acts of courage and self-sacrifice. Negative stress behaviours include misconduct behaviours (self-inflicted wounds, malingering, absent without leave, desertion, suicide etc.) combat fatigue and posttraumatic stress disorder etc. Apart from these stress can precipitate psychiatric illnesses like depression, anxiety, insanity, and alcohol and drug abuse."*

The same report stated the common stressors in the Army as: "(*a) During Training Period: Tender age at recruitment, loss of emotional support from family and friends, strenuous physical demands*

of training activities, limited scope for privacy and problems at distant home. (b) In Peace: Marital problems, children's education, property disputes, financial problems, difficulties with civil administration in resolving disputes. (c) In Field: Separation from family members, adverse climatic conditions, isolation, long tenures, unknown enemy in counter insurgency areas, uncertainty of life, difficult living conditions and fatigue." (p.9)

As regards, the mental health scenario in Armed Forces in India, WHO's projections indicate that by 2020 depression is going to be the second most common illness globally after cardiovascular diseases. There is a rising trend of psychiatric illnesses in our country over the last few decades. Armed Forces personnel being drawn from the same society are not immune to unique operational and environmental stresses, which are resulting in increasing incidences of psychiatric disturbances (Kumar, 2010).

Narang & Sharma (2014) conducted a study with an objective to explore the occupational stressors and its consequences among Indian army soldiers. The sample consisted of two army units each from the three major arms of the Indian Army, i.e. Combat arms (Infantry and Armored), Combat-support arms (Engineering and Artillery) and Services (Electrical and Mechanical Engineers, and Army Service Corps). It is probably the first empirical study based on active-duty soldiers of the Indian army apart from those available to the Defence institutions. The study identified 'lack of control at work' as the strongest stressor, followed by 'role conflict', 'inadequate awareness about profession', 'workload and job pressure', 'indifferent organizational attitude', 'unsupportive colleagues', 'inadequate training', 'role ambiguity' and 'ineffective leadership style'. Also, 'lack of operational freedom' and 'workload' contributed the most towards occupational stress; 'combat stressors' were the strongest army-specific stressor influencing army occupational stress; and home stress generated average/normal influence on occupational stress. Further, occupational

stress was found to have a significant positive relationship with the mental ill-health and job burnout among the soldiers. Furthermore, the organizational coping strategies presently adopted by the army had significant but very weak contribution in reducing occupational stress among the Indian soldiers. In 2011, the Institute of Defence Studies and Analyses found that irresponsiveness of the civil administration, conflicts in inter personal relationships at work, shortage of officers, tenure policy in counter insurgency areas and high altitudes, ambition fulfillment of officers, non-availability of quicker appellate mechanisms, psychological effects of low intensity conflicts, unpredictable factors (denial of leave in urgency, extended field tenures, absence of recreational avenues, inability to meet aspirations of spouse and children and so on), social apathy, humiliating remarks , poor leadership, early retirement blues (36 to 40 years of age), traumatic memories , reluctance in seeking psychiatrist's help , family stress, shortage of family accommodation in cantonment and peace station miseries with many commitments, excessive training exercises and lack of basic amenities were all important contributors to a stressful life for the soldier (Dixit, 2011). Pfanz and Ogle (2006) have observed that even though the military personnel have been able to adapt to the temporary hardships that wartime and humanitarian missions bring, the chronic stressors faced by them on an everyday basis are beyond their tolerance limit. The stress levels due to routine military work have a significant negative impact on their mental health (Pfanz & Ogle, 2006).

Gathering accurate and reliable information pertaining to the emotional and mental well-being of service members is a challenge. There are logistical issues surrounding this population with them being constantly in and out of combat zones on a rotational basis along with a tendency of not acknowledging or reporting such problems while on duty (Hoge et al., 2004). This hesitancy is due to a distrust in the efficacy of mental health treatments and an anxiety about the repercussions

of such an admittance on their career and reputation in the eyes of their fellow service members (Hoge et al., 2004). Another problem that arises in getting an accurate estimate of the emotional health problems rampant in this community is the fact that such problems often manifest long after the combat experience (Milliken, Auchterlonie, & Hoge, 2007).

Measurement of occupational stress among soldiers

There is some evidence to assume that occupational stress is an important factor in the everyday life of a soldier. This segment of population has been rarely studied as far as mainstream research is concerned. Hence this aspect of occupational stress has not been explored and understood much. The well-being of our soldiers is not just important to the Army but to the country as a whole. Any factor that may have a negative impact on the soldiers needs to be looked into. Unfortunately, there exists no proper standardized scale to measure occupational stress of soldiers especially in the context of Indian Army. Therefore, one study of this thesis (Study 1) is aimed at developing and validating a scale for measuring occupational stress. This new scale will provide us with clarity about the underlying factors that comprise the domain of occupational stress in the Indian soldiers. It will not just have theoretical importance but the findings can be used for applied aspects like policy making for this population.

Factors influencing Subjective and Psychological well-being of soldiers

This research will delve into the understanding of two aspects of well-being amongst the Indian soldiers namely subjective and psychological well-being. Well-being is the presence of positive

emotions and moods (for example contentment, happiness), the absence of negative emotions (for example depression, anxiety), satisfaction with life, fulfillment and positive functioning (Frey & Stutzer, 2002; Andrews & Crandall, 1976; Diener, 2000; Ryff, 1995). Subjective well-being (SWB) or Hedonic well-being is defined as "a person's cognitive and affective evaluations of his or her life" (Diener, Lucas, & Oishi, 2002, p.63). Psychological well-being (PWB) or the Eudaimonic conception of well-being calls upon people to live in accordance with their daimon or true self (Waterman, 1993). Ryff and Singer (1998, 2000) presented a multidimensional approach to the measurement of PWB that taps six distinct aspects of human actualization: autonomy, personal growth, self-acceptance, purpose in life, environmental mastery and positive relatedness.

Based on the literature review, certain risk and protective factors is selected to explore their role on soldiers' subjective and psychological well-being.

Risk factors

The risk factors for soldiers well-being included in the study are-

(1) Social isolation

(2) Occupational stress and

(3) Death anxiety

Social isolation is a subject concerned with the objective characteristics of a situation and refers to the absence of relationships with other people, that is to say, they believe that persons with a very small number of meaningful ties are socially isolated (Gierveld et al., 2006). According to Holmlund-Rytkonen & Strandvik (2005), occupational stress is the inability to cope with the pressures in a job, because of poor fit between someone's abilities and his or her work requirements

and conditions. Carpenito-Moyet (2008), defines death anxiety as the state in which an individual experiences apprehension, worry, or fear related to death and dying. In general, the literature shows that social isolation, occupational stress and death anxiety have a negative impact on the well-being levels in different populations. For example, social isolation has been associated with increased risk of depressive symptoms, suicide attempts, and low self-esteem in young people (Hall-Lande et al., 2007). Occupational stress can manifest itself as psychological distress, depression, anxiousness, passiveness/ aggressiveness, boredom, loss of self-confidence and esteem, loss of concentration, feelings of futility, impulsiveness, disregarding of social norms and values, dissatisfaction with job and life, losing contact with reality, and emotional fatigue (Vokic & Bogdanic, 2007). The times of heightened stress or threats to the health of self or loved ones can result in inefficient and pathological modes of coping in some cases (Kastenbaum, 2000; Yalom, 1980; Yalom 2008). Due to this death anxiety is considered to be a basic fear underlying the development and maintenance of various psychological conditions (Vess & Arndt, 2008; Furer & Walker, 2008; Strachan et al., 2007).

Protective factors

The protective factors for soldiers well-being included in the study are-

(1) Personality Traits

(2) Resilience

(3) Leadership and

(4) Group cohesion.

McAdams and Pals (2006), define personality as 'an individual's unique variation on the general evolutionary design for human nature, expressed as a developing pattern of dispositional traits, characteristic adaptations, and integrative life stories complexly and differentially situated in culture' (p. 212). According to Lee and Cranford (2008, p. 213) resilience is, "The capacity of individuals to cope successfully with significant change, adversity or risk". Horn & Walker in the Canadian Military Leadership Handbook (2008) have defined effective leadership as directing, motivating and enabling others to accomplish the mission professionally and ethically, while developing or improving capabilities that contribute to mission success. According to MacCoun & Hix (2010), cohesion is best described in terms of two components: task cohesion and social cohesion. Task cohesion concerns with the shared commitment among members to achieve a goal that requires collective efforts of group members. On the other hand, social cohesion refers to the quality of interpersonal relationships that the group members share – for instance whether members would provide material and emotional support to each other.

People with different personality traits tend to experience different degrees of subjective well-being. Individuals who are more extraverted, agreeable, conscientious, and emotionally stable tend to experience greater satisfaction with life, more frequent positive affect, and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). Scholtz (2003) reported that personality factors such as conscientiousness and neuroticism were significantly correlated with PWB and that both PWB and personality measures had a significant relationship with interpersonal and organizational deviance in Canadian Forces. The second potential protective factor of resilience was found to be positively correlated with dispositional resilience (measured using the three factors of commitment, control, and challenge) and PWB, except for the dimension of autonomy (Picardi et al., 2012). The results of a study by Sagone and Caroli (2013) showed

positive relationships between Psychological well-being (environmental mastery, personal growth, and self-acceptance) and resilience. Resilience has also been found to be negatively correlated with poor mental and physical health conditions, such as increased depressive symptomatology, post-traumatic stress disorder, and physical disability (Burns & Anstey, 2010; Connor, Davidson, & Lee, 2003; Hardy et al., 2004; Mehta et al., 2008). Research on leadership has found that destructive leadership was associated with lower well-being, increased stress, and poorer performance among followers (Schyns & Schilling, 2013). The final factor of unit cohesion has been established as a protective factor in cases of post-traumatic stress disorder (PTSD), common mental disorder and physical ill health when it comes to military personnel (Oliver et al., 1999; Brailey et al, 2007; Manning, & Fullerton, 1988).

Research Objectives

This thesis aimed to explore following objectives-

(1) To develop and validate a scale to measure occupational stress among soldiers of Indian Army.

(2) To identify and explore the role of significant risk and protective factors in the well-being of soldiers

(3) To understand the interaction effects of both risk and protective factors in influencing the well-being of soldiers

In order to explore above mentioned objectives, two quantitative studies were conducted as part of the thesis.

The Study 1 focuses on the development and validation of an Occupational Stress Scale for Soldiers (OSSS). The Study 2 focuses on the testing of the three proposed theoretical models of soldier well-being including a risk factors model, protective factors model and a moderator factors model where protective factors are conceptualized as moderators between risk factors and well-being measures.

Rationale for Study 1

This study focuses on the development and validation of an Occupational Stress Scale for Soldiers. The rationale behind the study is majorly two fold. The first reason being that this population has not been studied much as far as occupational stress is concerned. Whatever limited studies that have been carried out point towards the presence of various stressors at work for the soldiers that have an impact on their well-being. Some of the stressors include psychological effects of low intensity conflicts, isolation, long tenures, uncertainty of life, strenuous physical demands, difficult life conditions and the like. (Narang & Sharma, 2014; Hoge et al., 2004; Pfanz & Ogle, 2006; Dixit, 2011; Kumar, 2010). There is no specialized instrument to measure this construct for the soldiers in the public domain as far as India is concerned. The second reason is that many scales exist to measure occupational stress in the civilian population but since the job and serving conditions are very different in the armed forces, those scales may not be appropriate for this sample. Hence the need for the present study that is being undertaken.

Rationale for Study 2

This study focuses on the testing of the three proposed theoretical models of soldier well-being including a risk factors model, protective factors model and a moderator factors model where protective factors are conceptualized as moderators between risk factors and well-being measures.

The risk factors included social isolation, death anxiety, and occupational stress. The protective factors included personality, leadership, resilience and unit cohesion. The impact of these variables on subjective and psychological well-being was explored.

These variables are very closely connected to the life of a soldier. The studies carried out on the civilian population have proven their relevance as factors that affect well-being but empirical evidence with regard to a military sample is limited. For example, research on civilian population proves that social isolation has been associated with increased risk of depressive symptoms, suicide attempts, and low self-esteem in young people (Hall-Lande et al., 2007). Occupational stress, if not managed properly, can lead to chronic fatigue, musculoskeletal disorders, cardiovascular diseases, burnout, post-traumatic stress disorder, disintegration of personality, and suicide (Pestonjee & Shweta, 2000; Caverley, 2005; Kavanagh, 2005). Death Anxiety has been found to be significantly and positively correlated with depression (Lonetto & Templer, 1986). People with different personality traits tend to experience different degrees of subjective well-being. Individuals who are more extraverted, agreeable, conscientious, and emotionally stable tend to experience greater satisfaction with life, more frequent positive affect, and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). Resilience has also been found to be negatively correlated with poor mental and physical health conditions, such as increased depressive symptomatology, post-traumatic stress disorder, and physical disability (Burns &

Anstey, 2010; Connor, Davidson, & Lee, 2003. Research on leadership has found that destructive leadership was associated with lower well-being, increased stress, and poorer performance among followers (Schyns & Schilling, 2013). Unit cohesion has been established as a protective factor in cases of post-traumatic stress disorder (PTSD), common mental disorder and physical ill health when it comes to military personnel (Oliver et al., 1999; Brailey et al, 2007; Manning, & Fullerton, 1988). These researches give a background as to how these factors may be playing an important role in the life of a soldier.

All these variables are significantly associated with the lives of soldiers. However, most of the evidences are available in the context of civilian population. Therefore, it is necessary to explore these variables in the context of soldier's life to understand their role in the well-being. Furthermore, empirical studies of soldiers subjective and psychological well-being are negligible especially in the Indian context. Therefore, this study is likely to give newer insights in this direction. This study will have both theoretical and applied implications that may be relevant for policy making for soldier's mental health.

Chapter 2

Review of Literature

In review of literature all the variables of the study namely: subjective well-being, psychological well-being, social isolation, occupational stress, death anxiety, personality, resilience, leadership and group cohesion will be viewed in terms of the current research and how relevant that research is in the context of our study. These variables have been included in this study because of their everyday involvement in a soldier's life. This chapter will give more clarity to what can be expected when the analysis of the data is done and the kind of conclusions that can be drawn from our sample.

2.1 The concept of Well-being

There is a lack of consensus when it comes to a single definition of Well-being but the general agreement is that it includes the presence of positive emotions and moods (for example contentment, happiness), the absence of negative emotions (for example depression, anxiety), satisfaction with life, fulfillment and positive functioning (Frey & Stutzer, 2002; Andrews & Crandall, 1976; Diener, 2000; Ryff, 1995). In a nutshell, well-being can be described as judging life positively and feeling good (Diener, Suh, Oishi, 1997; Veenhoven, 2008).

There are two perspectives through which well-being is measured namely Subjective well-being and Psychological well-being. Both these perspectives will be explored in the context of the current study that is being undertaken. Subjective well-being (SWB) or Hedonic well-being is defined as "a person's cognitive and affective evaluations of his or her life" (Diener, Lucas, & Oishi, 2002,

p.63). The cognitive element in the definition refers to what one thinks about his or her life satisfaction in global terms or (life as a whole) and in domain terms (in specific areas of life such as work, relationships). The affective element relates to an individual's emotions, moods and feelings. The measures of SWB thus include life evaluation (a reflective assessment on a person's life or some aspect of it) and affect (a person's feelings or emotional states, typically measured with reference to a particular point in time). The concept of SWB has three hallmarks. First, it is subjective. According to Campbell (1976), it resides within the experience of the individual and therefore objective conditions such as health, comfort, virtue or wealth are absent from the definitions (Kammann, 1983). Such conditions are seen as potential influences on SWB, they are not seen as an inherent and necessary part of it. Second, SWB includes positive measures. It is not just the absence of negative factors, as is true of most measures of mental health. However, the relationship between positive and negative indices is not completely understood. Third, the SWB measures typically include a global assessment of all aspects of a person's life. Even though affect and satisfaction within a certain domain may be assessed, the emphasis is usually placed on an integrated judgment of an individual's life.

Psychological well-being (PWB) or the Eudaimonic conception of well-being calls upon people to live in accordance with their daimon or true self (Waterman, 1993). It occurs when people are holistically and fully engaged and their life's activities are most congruent with values that they hold dear. Well-being is not a measure of a final outcome or state, but rather a process of fulfillment or realization of true human nature and achievement of human potential. Under such circumstances people would feel intensely alive and authentic. Ryff and Singer (1998, 2000) presented a multidimensional approach to the measurement of PWB that taps six distinct aspects of human

actualization: autonomy, personal growth, self-acceptance, purpose in life, environmental mastery and positive relatedness.

Autonomy denotes independence and self-determination, capability of regulating social pressure, It assumes internal regulation of behavior and evaluation of self on the basis of personal values and standards. Personal growth denotes the pursuit of continuous development, growth and realization of personal potentials, openness towards new experiences, readiness for changes which reflect greater self knowledge and personal efficacy. Self-acceptance denotes positive self-regard, as well as the acceptance of good and bad aspects of oneself. Purpose in life denotes an orientation towards setting objectives, feeling for the meaning of the current moment as well as past life experiences, retaining attitudes which give life a purpose and meaning. Environmental mastery denotes a feeling of competency in managing the environment, control of a whole series of external activities, capacity of choice and creation of appropriate context for achieving personal worth. Positive relatedness denotes positive and trusting relationships with other people, warmth, satisfaction, capability of feeling empathy, and exchange of positive emotions (Ryff & Singer, 1998).

In the introduction section we have discussed the various potential stressors in a soldier's life. A soldier encounters many daily stressors and is also exposed to trauma very frequently in the course of his duty. Currently there is a lack of empirical evidence in the Indian context in this regard. Hence the study will explore the concept of Subjective and Psychological well-being in relation to specific variables which form an integral part of a soldier's life. The present study will explore the relationship of SWB and PWB to occupational stress, social isolation, death anxiety, personality, resilience, leadership and group cohesiveness. The succeeding sections of the review of literature

will focus on bringing clarity on the same by examining each of these variables in light of the two measures of well-being.

2.2 Occupational Stress

Occupational stress has become a major topic of concern in the field of Human Resource Management (Luthans, 2002). It is defined as the perception of a discrepancy between environmental demands (stressors) and individual capacities to fulfill these demands (Topper, 2007). According to Holmlund-Rytkonen & Strandvik (2005), occupational stress is the inability to cope with the pressures in a job, because of poor fit between someone's abilities and his or her work requirements and conditions. National Institute of Occupational Safety and Health defines occupational stress as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker (Sauter, Murphy, & Harrell, 1990). From these definitions we can safely conclude that occupational stress is a predominantly subjective phenomenon that involves the employee's active interpretation of his or her objective circumstances. The potential stressors in themselves are not inherently severe or negative, but the individual differences in the cognitive appraisal and coping styles make the same stressor to be experienced as a challenge for one and a hindrance for another individual (Hendel & Horn, 2008).

Koslowsky (1998) and French, Caplan & Van Harrison (1982) have put forward the following classifications of Occupational stressors:

Task related stressors: At the workplace, elements of the tasks that are carried out could be initiators of the stress process as interaction takes place with the individual. Examples of such task

related stressors include issues like task complexity, task completion pace, time pressure, and task ambiguity (Prottas & Thompson, 2006; Wong et al., 2012; Fimian, 1984; Burke & Weir, 1976).

Physical/ Environmental stressors: These stressors as implied are elements of the workplace environment that are inherent to the nature of work like excessive vibration from equipment, excessive noise and heat (Wong et al., 2012; Koslowsky, 1998), inadequate lighting and unavoidable exposure to weather elements (off shore workers, fishermen, military personnel, police officers, construction workers). Other environmental stressors include crowding, air pollution and toxic fumes (Koslowsky, 1998). Administrative as well as engineering controls can be implemented to diminish most environmental/ physical stressors (Pulat, 1997).

Individual/social stressors: These type of stressors originate from the domain of the individual and/ or interactions with other individuals and could be objective stressors as well as perceived stressors in the workplace. Examples can include lack of coworker support, discrimination and sexual harassment (Prottas & Thompson, 2006).

Organizational stressors: These are stressors that arise from the structure of task completion processes, personnel hierarchy and the environment within the workplace. Organizational stressors can also be referred to as management stress. Examples include low level of decision latitude and lack of adequate compensation (Fimian, 1984).

Occupation specific stressors: These stressors are usually characteristics of a particular profession that trigger the stress-strain process that are usually unique to that particular profession. For example, academic teaching staff may not have to experience trauma with the same frequency and duration as that of emergency response personnel, doctors, nurses, military personnel and police officers (Fimian, 1984; Prottas & Thompson, 2006).

Safety stressors : Stressors concerning safety sometimes over lap with task related stressors like task relevance/urgency (emergency response tasks, medical emergencies) and organizational stressors like inadequate emergency training response (Wong et al., 2012).

Career and Achievement stressors: Many career and achievement stressors were grouped as individual and organizational stressors (Wong et al., 2012). The reason for such classification being that sometimes career related stressors could be perceived (for example feeling of limited promotion opportunities) and as such originate from the domain of the individual. Other career and achievement stressors could be objective (for example "the level of my ability is not being fully utilized", Wong et al, 2012) and could be a result of poor organizational / managerial structure.

Occupational stress affects the organization and the employee both in a negative way. For the organization the effects can be disorganization, disruption in normal operations, lowered productivity and lower margins of profit. For the employee the effects can be increased physical health problems, psychological distress and behavioral changes (Rice, 1992). It can also show itself as high dissatisfaction among the employees, job mobility, burn out, poor work performance and less effective interpersonal relations at work (Manshor, Rodrigue, & Chong, 2003). Occupational stress, if not managed at properly, can lead to chronic fatigue, musculoskeletal disorders, cardiovascular diseases, burnout, post-traumatic stress disorder, disintegration of personality, and suicide (Pestonjee & Shweta, 2000; Caverley, 2005; Kavanagh, 2005). A job stressed individual is likely to have greater job dissatisfaction, increased absenteeism, increased frequency of drinking and smoking, increase in negative psychological symptoms and reduced aspirations and self-esteem (Jayashree, 2010). According to International Labour Organization psychological problems due to occupational stress may lead to injury, illness, stigmatization,

isolation and even death (Muntarbhorn, 2005). As per Vokic and Bogdanic (2007) occupational stress can result in psychological distress, depression, anxiousness, passiveness/ aggressiveness, boredom, loss of self-confidence and esteem, loss of concentration, feelings of futility, impulsiveness , disregarding of social norms and values, dissatisfaction with job and life, losing contact with reality, and emotional fatigue.

When it comes to individual personality differences, occupational stress can be looked upon as a function of the interaction between the work characteristics and the attributes of the individual worker. In this regard there are two major personality types that need to be taken into account, Type A and Type B personality types. Type A behaviors include ambition, aggressive competitiveness, and an eagerness to get things done on time, as well as self-absorption, and a tendency to be cynical and hostile (Wainwright & Calnan, 2002). Type A personality involves types of people known as hot reactors (Wainwright & Calnan, 2002) . They tend to suffer from extreme surges in blood pressure in their everyday lives. Studies have shown that individuals displaying Type A characteristics have a significantly increased risk of experiencing the serious effects of stress, specifically with respect to cardiovascular disease (Wainwright & Calnan, 2002; Bickford, 2005). It is argued that individuals exhibiting Type A behaviors are more likely to enter into demanding jobs, more likely to over react to them, and for this reason would be more vulnerable to stress and coronary heart disease in particular (Wainwright & Calnan, 2002; Bickford, 2005). Such individuals feel restless when not working, and are always in a state of time urgency and feeling of responsibility (Puffer & Brakefield, 1989; Sutherland, 1995; Luthans, 2002). They have a high desire for controlling events (Jain et al., 2002) and may show ineffective coping styles, helplessness and resentment in their jobs if they fail because of the inability to control all external circumstances (Puffer & Brakefield, 1989). On the other hand, Type B

personality includes behaviors that are much more relaxed and less competitive. Such people are more patient and take a broader view of things before reacting (Treven & Potocan, 2005; Luthans, 2002). Type A personality types cope with their stress better as compared to Type B but Type B does better when it comes to high ranking positions where a broader perspective is needed before making decisions (Luthans, 2002). When it comes to completing complex tasks the performance of Type A individuals is better than Type B (Puffer & Brakefield, 1989).

Another personality factor that has been found to affect individual reactions to stressors is known as the "locus of control". People can be different on the basis of their "generalized expectancy" that concerns the internal and external control of life events and outcomes. Some people feel that events are caused by factors that are external to them on which they have little or no control over (meaning they have an external locus of control), while others tend to feel that events are caused by internal factors which they have a great deal or entire control over (meaning they have an internal locus of control). Evidence suggests that individuals who have an external locus of control tend to respond to perceived stressors with negative emotions and may be more prone to the negative effects of stress at work (Grimshaw, 1999). These individuals have been shown to report more burn out and higher levels of perceived stress, less job satisfaction, greater anger, frustration, hostility and higher levels of anxiety (Grimshaw, 1999). Whereas the internal locus of control is associated with a number of highly desirable behaviors and attributes like higher job motivation and better performance, higher job satisfaction and psychological well-being (Grimshaw, 1999). The underlying premise is that individuals who define stress factors as controllable will be more likely to try and cope with them using a problem solving approach and hence will experience fewer negative effects. Externals might not take active steps to resolve their feelings of stress (Grimshaw, 1999). Internal locus of control has also been found to be related to successful adaptation to

stressful work settings (Parkes, 1986), job performance (Peterson & Albrecht, 1996), job satisfaction (Rees & Cooper, 1992) and lowered perception of work role stress (Siu & Cooper, 1998). There is evidence to suggest that the well established protective effects of internal locus of control might be exerted through people's subjective perception or interpretation of situations they encounter (Luo, 1999).

Occupational stress among military personnel

Every organization has some occupational stressors but their degree of severity varies from one occupation to another and also on the subjective perception of each individual (Gignac & Appelbaum, 1997). Some stressors may be common to all occupations but some are specific to one occupation. These specific stressors must be explored to manage stress in that particular organization (Chang et al., 2005). For example, police officers perform their duties in high risk and high demand situations. Gershon (2000) concluded that working under continuously stressful conditions leads to the dissatisfaction and exhaustion of police officers. The stressful conditions that law enforcement officers are exposed to affect both their work related and their physiological well-being. Martinussen, Richardson & Burke (2007) found burn out to be one of the most important outcomes of work related stress and the strong impact it had on the quality of professional relationships. Burn out also influences police officer's interactions with the public and especially their violence towards citizens (Kop, Euwema, & Schaufeli, 1999); and also influences the work–family conflicts (Mikkelsen & Burke, 2004). Organizational stress has been found to affect the police officer's level of stress more strongly than the operational stress does (Violanti & Aron, 1995; Morash et al., 2008). When it comes to the Armed forces, stress can lead to impaired alertness, performance and is a threat to safety of human life, economy and nation (Ahmadi et al., 2006). Exposure to combat, being a witness to heavy casualties, deployment in war

zones and unexpected mobilizations of units are related to a high level of psychological distress. Being frequently exposed to war zone stressors can also lead to post traumatic stress disorder in military personnel (Litz et al., 1997). In the Indian context, some data is available with regards to police personnel, naval officers, CRPF personnel and occupational stress of the Indian Army soldiers. Nikam and Shaikh (2014) found that high levels of stress amongst police personnel has led to a degradation of general well-being, level of satisfaction and lowered commitment to the organization. Occupational stress was measured in 413 naval officers serving afloat and ashore. Naval personnel serving on board submarines and ships had lower levels of occupational stress as compared to those serving on shore establishments. Stress scores were higher among junior sailors (36.7%) as compared to officers and senior sailors. Life satisfaction scores were lower in junior sailors and greater occupational stress was linked to lower life satisfaction (Pawar & Rathod, 2006). Sandhu, Kaur, and Sharma (2011) selected a sample of 165 combat soldiers from the Indian Army and the results indicated moderately severe stress with workload and job pressure and indifferent organizational attitude as the most severe stressors for the soldiers.

Occupational stress remains less explored when it comes to the Indian military. A soldier is on duty even during his off hours in the strict regimented system of the Army. He is not only exposed to daily stressors but also combat stressors. Results of the few studies available in this area show the presence of occupational stress in the lives of the soldiers and hence more evidence is needed to ascertain it's nature and effects on this particular sample. One study that is being undertaken as part of this thesis will focus on the construction and validation of an Occupational Stress Scale for Soldiers that will shed light on the nature of stressors in the routine life of a soldier. Presently such a scale is not available in the public domain thus making this study relevant.

2.3 Social Isolation

According to Gierveld et al (2006), social isolation is a subject concerned with the objective characteristics of a situation and refers to the absence of relationships with other people, that is to say, they believe that persons with a very small number of meaningful ties are socially isolated. Biordi and Nicholson (2009) defined it as, social isolation refers to where it is involuntary and perceived as negative and where the social network is shrinking in quality or quantity of contacts. Furthermore, the quantity of social contacts is not the only factor in view, Biordi also took the quality of contacts into consideration when determining social isolation. Fleury, Keller & Murdaugh (2000) regarded social isolation as living alone, lacking instrumental support and being unable to share life expectations with a confidant. According to them, social isolation is related to confidants. People who are socially isolated will be reluctant or unwilling to share their personal feelings with confidants.

Even though social isolation is generally viewed today as a deprivation in social contacts, Perlman (1988) suggests that it is loneliness and not social isolation, that occurs when an individual perceives her or his social relationships as not containing the desired quantity or quality of social contacts. Hoeffer (1987) found that the perception of relative social isolation was more predictive of loneliness than actual isolation. Loneliness has been referred to as an alienation of the self and is sometimes seen as global, generalized, disagreeable, uncomfortable, and more terrible than anxiety (Austin, 1989). Loneliness differs from depression in that in loneliness, one attempts to integrate oneself into new relationships, whereas in depression, there is a surrendering of oneself to the distress (Vincenzi & Grabosky, 1987).

Nonetheless, loneliness does relate to social isolation. In fact, loneliness is the one concept most invoked when social isolation is considered (Hoeffer, 1987; Mullins & Dugan, 1990; Ryan & Patterson, 1987). However, using social isolation and loneliness as interchangeable terms can be confusing. To maintain clarity, loneliness should be considered as the subjective emotional state of the individual, whereas social isolation is the objective state of deprivation of social contact and content (Wenger et al., 1996). Therefore, loneliness refers to the psychological state of the individual, whereas social isolation relates to the sociologic status.

Strong social support networks are particularly important when it comes to mental health and preventing behavioral problems (McPherson et al., 2006). In particular, social isolation has been associated with increased risk of depressive symptoms, suicide attempts, and low self-esteem in young people (Hall-Lande et al., 2007). In another large national child development study in the United Kingdom, researchers found that social isolation in childhood is associated with higher levels of C-reactive protein (an indicator of coronary heart disease) in mid-life (Effoe et al., 2014). Among both young and older adult populations, social isolation has been linked with a wide spectrum of health problems ranging from susceptibility to the common cold (Cohen, 2001) to the ability to survive a natural disaster (Pekovic, Seff, & Rothman, 2007; Lubben & Gironda, 2003). A number of researchers have demonstrated that an inadequate social support network is associated with an increase in both morbidity and mortality (Berkman, 1984; Berkman & Syme, 1979; Bosworth & Schaie, 1997; Blazer, 1982; Ell, 1984; House, Landis, & Umberson, 1988; Rook, 1994; Zuckerman, Kasl, & Ostfeld, 1984). Some researchers have reported an association between limited social ties, poor overall health and wellbeing (Chappell, 1991; Krause, Herzog, & Baker, 1992; Lubben, Weiler, & Chi, 1989; Rook, 1994; Stuck et al., 1999). There is a documented connection between social support networks and adherence to desired health practices (Potts,

Hurwicz, Goldstein, & Berkanovic 1992). Social isolation has also been associated with increased symptoms of psychological distress or loneliness, which may be risk factors for future disease and disability (Lin, Ye, & Ensel, 1999; Thoits, 1995; Turner & Marino, 1994; Wenger, Davies, Shahtahmasebi, & Scott, 1996). Social isolation in younger people may ultimately threaten the safety and well-being of others when emotions are externalized. This has been documented in the cases of many adolescent mass murderers who were retrospectively described as socially isolated or ostracized from peers (Levin & Madfis, 2009). A recent study by Martin & Hartley (2017) found that lonely veterans were more susceptible to depression and their condition was worsened by the perception of increased stress levels.

Social networks may provide essential support needed during times of illness, thereby contributing to better adaptation and quicker recovery time. Social ties can be instrumental in adherence to good health practices and the cessation of bad ones (Potts et al., 1992). Strong social bonds may offer a stress-buffering effect that reduces the susceptibility of an individual to stress-related illnesses (Cobb, 1976; Krause & Liang, 1993; Mor-Barak, Miller, & Syme, 1991; Thoits, 1982). Social connections might also provide improved access to important resources such as relevant health knowledge, timely care, or transportation to and from health-care appointments. More recent research explored possible direct biological effects of social ties on human physiology, perhaps by stimulating the immune system to ward off illnesses more effectively (Seeman, Singer, Ryff, Dienberg Love, & Levy-Storms, 2002). In the case of individuals with cancer (Burnley & Kurth, 1992; House, Landis, & Umberson 1988; Reynolds, & Kaplan, 1990) or heart disease (Orth-Gomer, Unden, & Edwards, 1988) social support is significant to their survival.

Social Isolation is an important variable for this study because a soldier stays away from his family and other support groups for long stretches of time in line of his job demands. The soldier many a

times is unable to be with his family in their hour of need because of the unavailability of leave. He is himself exposed to daily stresses and potentially traumatic events because of the nature of his job. This may lead to feelings of stress and loneliness in him. Since social isolation has been found to manifest itself in various negative ways, the impact of it on the well-being of the soldiers becomes an area that needs to be explored.

2.4 Death anxiety

The awareness of our mortality and fear of death have been an integral part of the human condition throughout the recorded history. According to Yalom (2008), human beings are forever shadowed by the knowledge that we will grow, blossom, and inevitably, diminish and die. According to Harmon-Jones et al (1997), death anxiety is defined as anxiety caused by conscious and unconscious fear of death and dying. Carpenito-Moyet (2008), defines death anxiety as the state in which an individual experiences apprehension, worry, or fear related to death and dying. Another perspective on death anxiety states that it is a vague uneasy feeling of discomfort or dread generated by perceptions of a real or imagined threat to one's existence (Lehto & Stein, 2009). Not surprisingly, death has the power to evoke fears of powerlessness, separation, loss of control and meaninglessness (Coryel, Noyes, & House, 1986; Stolorow, 1979; Yalom, 2008) and for some individuals, fear of death can negate fulfillment and happiness (Yalom, 2008).

Terror Management theory (TMT) proposes that human beings strive for self preservation but they are also aware of death (Pyszczynski, Greenberg, & Solomon, 1999). TMT argues that in order to buffer against the anxiety that derives from the awareness of the inevitability of one's death, individuals strive to give meaning to their lives. This occurs through the development of cultural

worldviews and the establishment and maintenance of self-esteem (Greenberg, Solomon, & Pyszczynski, 1997). “If a psychological structure provides protection against the potential terror engendered by knowledge of mortality, then, reminders of mortality should increase the need to maintain that structure” (Greenberg, Solomon, & Pyszczynski, 1997, p.78). A number of studies have shown that in comparison to participants in the controlled conditions, participants who were primed or otherwise asked to think about their mortality tend to value behaviors consistent with their cultural world view more and strongly denigrate individuals who acted contrary to such views (Solomon, Greenberg, & Pyszczynski, 1991; Greenberg, Solomon, & Pyszczynski, 1997). When people were reminded of the inevitability of their own deaths it made them more concerned with self-esteem and more likely to cling to cultural world views. In particular, efforts to cope with one’s impermanence are considered to be at the root of human social behavior, and can precipitate the development of symbolic language, creation of art and music and attempts to transcend the human body (Shaver & Mikulincer, 2012).

Even though human beings try to develop adaptive methods for coping with death anxiety, the times of heightened stress or threats to the health of self or loved ones can result in inefficient and pathological modes of coping in some cases (Yalom, 2008). Due to this death anxiety is considered to be a basic fear underlying the development and maintenance of various psychological conditions (Vess & Arndt, 2008; Furer & Walker, 2008; Strachan et al., 2007) and it is not uncommon for psychologists and therapists to encounter individuals who struggle with the concept of death. Research has shown that there is a positive correlation between death anxiety and general anxiety (Abdel-Khalek, 1997, 1998, 2001; Templer et al., 1990). Chatard et al (2012) investigated the anxiety buffering function among individuals with post traumatic stress disorder (PTSD) following a civil war. In this study, individuals with high PTSD symptoms reported increased immediate

death related thought accessibility following mortality salience induction. In addition, mortality salience resulted in an increased reporting of trauma symptoms for individuals with high exposure to the war, but not for those with low exposure. These findings confirm that high PTSD is characterized by impaired suppression of death thought accessibility following mortality salience induction. Safren et al (2003) studied a sample of 75 patients with HIV, more than half of whom also met criteria for a diagnosis of PTSD where death anxiety was associated with an over all PTSD symptom severity and severity of re-experiencing avoidance and arousal symptoms.

Death Anxiety has been found to be significantly and positively correlated with depression (Lonetto & Templer, 1986) to the point that the alleviation of depression actually reduces death anxiety (Templer, Ruff & Simpson, 1974). A possible explanation for the relationship between depression and death anxiety according to terror management theory is that depression is caused by fragile faith in cultural worldviews and an inefficient capacity to buffer anxiety and to cultivate meaning, self-esteem and fulfilling relationships (Maxfield, John, & Pyszczynski, 2014). This lack of protection against anxiety may lead an individual to experience life without meaning, value and connectedness to others. Hence, depressed individuals may require additional protection against mortality related concerns and anxiety (Maxfield, John, & Pyszczynski, 2014). The thoughts of death or mortality salience may be a general factor in the experience of obsessive compulsive disorder (OCD) and can explain the extreme focus that individuals with OCD place on the elimination of germs, disease and danger (Strachan et al., 2007). Research has also shown that there is a correlation between suicide and death anxiety (D'Attilio & Campbell, 1990; Lester, 1979; Minear & Brush, 1981; Stiluon, Mc Dowell, & Shamblin, 1984; Tarter, Templer, & Perley, 1974). Lester (1996) examined people's fear of death and suicide probability. He asked 78 undergraduate students to imagine that they were dying of cancer. The students were assigned to

different levels of pain and chemotherapy. They were then asked to estimate their probability for committing suicide. The results indicated that the probability of suicide was positively related with the fear of dying. Suicide appeared to be an option to avoid the pain of cancer.

In 1995, Alvarado et al. researched the correlation between strong religious conviction, belief in an afterlife and death anxiety. The results indicated that strong religious conviction and a belief in the afterlife were associated with less death anxiety. Individuals with intrinsic religious motivation have significantly lower levels of death anxiety than people with extrinsic religious motivation (Clements, 1998; Martin & Wrightsman, 1965; Minear & Brush, 1981; Suhail & Akram, 2002; Templer, 1972). There also exists a significant negative relationship between death anxiety and self-esteem (Koob & Davis, 1977; Schulz & Aderman, 1978; Davis et al., 1983; Davis, Martin, Wilee, & Voorhees, 1978).

Death anxiety can impact people in their work experiences. Many occupations share characteristics in which the recognition and realization of one's own mortality (Greenberg, Pyszczynski, & Solomon, 1986) is high. This includes jobs where employees are exposed to the dead and dying (for example, nurses, emergency medical technicians, morticians), and jobs where employees are in danger or injury themselves (for example police, coal miners, military). Studies by Koob and Davis (1977) and Ford, Alexander & Lester (1971) that were conducted on military officers and policemen revealed that death anxiety of people engaged in high risk occupations was no higher than that of many groups involved in less risky occupations. Recently there have been calls for researchers to incorporate concepts related to mortality into workplace literature such as mortality salience/death awareness, death reflection, and death anxiety (Grant & Wade-Benzoni, 2009; Stein & Cropanzano, 2011). Despite this there remains very scanty research on death anxiety at work till date.

Death is a potential danger in military life not just for the self but also for friends and colleagues. From the above literature we can conclude that how a soldier perceives death is important for the quality of life that he lives and his well-being. Death anxiety in people working in hazardous circumstances remains unexplored which is what this study aims to do in this particular context.

2.5 Personality

The scientific study of personality can be traced back to the year 1937, when Gordon Allport published Personality: a psychological interpretation, Ross Stagner published Psychology of personality, and Henry Murray published Explorations in personality in the year 1938. These developments were built on the philosophical, psychiatric and psychological work of the likes of William James in the United States and of Sigmund Freud, Pierre Janet, Kurt Lewin etc in Europe (Lombardo & Foschi, 2002).

The various definitions of personality highlight the distinct concerns of each perspective. Raymond Cattell defined personality as 'that which permits a prediction of what a person will do in a given situation' (Cattell,1950, p.2), and later as that 'which defines what a person will do when faced with a defined situation' (Cattell ,1979, p. 14). Behavioral definitions typically focus on the behavior itself, and the behavioral habits formed by experience. Behaviorism avoided positing concepts that were not observable (Skinner, 1950), but later the cognitive behavioral approaches included expectations and other cognitions as component parts of personality to determine an individual's behavior (Bandura, 1986).

From his personality trait approach (an approach that asserts the importance of traits, but also the integration of the whole person), Gordon Allport (1937) defined personality as 'the dynamic

organization within the individual of those psychophysical systems that determine his unique adjustments to the environment" (Allport, 1937, p. 48). A definition that puts forth a contemporary take on this personality integration is offered by McAdams and Pals (2006), who define personality as 'an individual's unique variation on the general evolutionary design for human nature, expressed as a developing pattern of dispositional traits, characteristic adaptations, and integrative life stories complexly and differentially situated in culture' (McAdams & Pals, 2006, p. 212). The emphasis on dynamics and development in these two personality definitions reminds us that some theories emphasize function and change, in contrast to the typically more static trait focused view. The common ground for both these views is that an individual's personality begins with biologically innate components, both those shared with others and those that are distinct because of heredity or other influences. Over the course of life, these innate tendencies are influenced by many factors like family experience, culture and other experiences which result in a pattern of habitual behaviors, cognitions, emotional patterns etc. to constitute an individual's personality.

Research has confirmed a basic five factor model of personality or 'Big Five' (Digman, 1990; Goldberg, 1993) with the following dimensions:

Openness: People high on this dimension are original, imaginative, curious, open to new ideas and artistic.

Conscientiousness: Such people are responsible, self-disciplined, organized and achieving.

Extroversion: Highly extrovert people are sociable, outgoing, talkative, fun loving and affectionate.

Agreeableness: People high on agreeableness are good natured, warm, gentle, cooperative, trusting and helpful.

Neuroticism: Highly neurotic people are emotionally unstable, prone to insecurity, anxious, guilty, worried and moody (Costa & McCrae, 1989).

The Big Five forms the basis for trait assessment of personality at the beginning of the twenty-first century, with questionnaires such as the NEO-PI and subsequent revisions, NEO-PI-R (Costa & McCrae, 1992) being used widely in occupational psychology.

In the late 1990s, meta-analysis carried out by DeNeve and Cooper (1998) showed the existence of a large number of studies on the relationship between personality and the two dimensions of subjective well-being (Veenhoven, 1988): affective (positive affect, negative affect and the balance between them) and cognitive (life satisfaction). Costa and McCrae (1992) have suggested that Agreeableness and Conscientiousness tend to increase the probability of positive experiences in social and achievement oriented situations, which in turn, is directly related to subjective well-being. According to them openness to experience leads the person to experience both more positive and more negative emotional states. They also argue that extraversion has an influence on positive affect, while Neuroticism influences negative affect. Hence the assertion that these two basic dimensions of personality lead to positive and negative affect, respectively (Costa & McRae, 1980; Costa & McCrae, 1991). A study by Gutierrez-Zotes et al (2004) examined the relationship between Big Five Personality dimensions, demographic factors like (sex, age and relationship status) and subjective well-being in a sample of 236 nursing professionals. The results showed personality as one of the most important correlates of subjective well-being especially through Extraversion and Neuroticism. It was found that there was a positive association between openness to experience and the positive and negative components of affect. The demographic variables were found to be differentially related with different elements of subjective well-being and the reasons for this could be found in the relationship between demographic variables and personality.

People with different personality traits tend to experience different degrees of subjective well-being. Individuals who are more extraverted, agreeable, conscientious, and emotionally stable tend to experience greater satisfaction with life, more frequent positive affect, and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). Personality traits may influence subjective well-being directly or indirectly. For example, highly extraverted individuals tend to experience higher levels of positive affect, and have stronger affective responses to positive events, as compared to their introverted counterparts; similarly, highly neurotic individuals tend to experience more chronic negative affect levels, and have more intense reactions to negative events (Bolger & Schilling, 1991; Gross, Sutton, & Ketelaar, 1998; Headey & Wearing, 1989; Luhmann & Eid, 2009). These direct effects of personality traits on positive and negative affect may help to explain as to why extraverted and emotionally stable individuals generally experience a greater level of well-being. In a study by Tanksale (2015) the relationship between the Big Five personality traits and subjective well-being (SWB) was examined in the Indian context. SWB variables used were life satisfaction, positive affect and negative affect. A total of 183 participants in the age range 30-40 years from Pune, India, participated in the study. Backward stepwise regression analysis showed that the Big Five traits accounted for 17% of the variance in life satisfaction, 35% variance in positive affect and 28% variance in negative affect. Conscientiousness was the strongest predictor of life satisfaction. Neuroticism and extraversion were found to predict negative affect and positive affect, respectively. Openness to experience and agreeableness did not contribute to SWB in the sample.

Personality traits may also influence subjective well-being indirectly through behaviors and the resulting outcomes. For example, compared to disagreeable people, highly agreeable individuals tend to engage in more pro social behaviors like cooperating with others, expressing compassion

and support and treating others with politeness and respect (Graziano & Tobin, 2009). Perhaps due to this, agreeable individuals tend to be better liked by their peers (Jensen-Campbell et al., 2002; Newcomb, Bukowski, & Pattee, 1993) and are more successful in establishing stable and satisfying close relationships (Karney & Bradbury, 1997; Robins, Caspi, & Moffitt, 2002). These positive social outcomes may then lead to an increase in the agreeable individuals' subjective well-being. Similarly, highly conscientious individuals tend to perform tasks efficiently, thoroughly, and reliably, which leads to success in school and the workplace (Barrick, Mount, & Judge, 2001; Berry, Ones, & Sackett, 2007; Noftle & Robins, 2007). Such success brings material (e.g., income) and psychological (e.g., sense of purpose) rewards, both of which may contribute to the positive association between conscientiousness and subjective well-being.

There are reasons to suspect that sustained high or low levels of subjective well-being might influence people's personality traits. For example, an individual leads a life that consistently generates high levels of life satisfaction and positive affect. Being in a good mood typically leads to sociable, generous, and exploratory behavior (George & Brief, 1992; Isen, 1987; Fredrickson, 1998). Over time, a consistent pattern of such behavior may become integrated into the individual's self-concept and other psychological systems leading to an enduring increase in Extraversion, Agreeableness, and Openness to Experience. Similarly, life circumstances that consistently produce negative emotions may lead an individual to internalize this unpleasant affect and may lead to a pattern of socially withdrawn, self-focused and cautious behavior that often accompanies negative moods (Loewenstein, Weber, Hsee, & Welch, 2001; Mor & Winquist, 2002; Rubin & Burgess, 2001). In terms of personality traits, this would lead to an increase in Neuroticism and a decrease in Extraversion, Agreeableness, and Openness.

Subjective well-being may also influence personality traits by providing a psychological incentive for certain patterns of behavior. As previously discussed, agreeable behavior generally increases the likelihood of social success, conscientious behavior promotes success in school and the workplace, and experiencing either kind of success can at least temporarily increase the levels of subjective well-being. The individual's desire to maintain a high level of well-being may motivate them to continue behaving agreeably and conscientiously in the future, leading to further success and well-being. If this positive feedback loop sustains itself over a long period of time. For example, through investment in an enduring close relationship or successful career; (Wood & Roberts, 2006), the individual may gradually internalize the behavioral pattern, thereby leading to an increase in his/her trait levels of Agreeableness and Conscientiousness.

Personality characteristics may also influence Psychological well-being (PWB) in similar ways. It has been found that individuals who are low on both SWB and PWB have the highest levels of neuroticism and lowest levels of extraversion; whereas those who are high on both SWB and PWB show the opposite pattern (Keyes, Shmotkin, & Ryff, 2002). In a study of 312 Indian university students by Ullah (2017) neuroticism emerged as the strongest negative predictor of PWB followed by positive predictors like conscientiousness, openness and extraversion. Scholtz (2003) reported that personality factors such as conscientiousness and neuroticism were significantly correlated with PWB and that both PWB and personality measures had a significant relationship with interpersonal and organizational deviance in Canadian Forces. Results of a study by Chaturvedula & Joseph (2007) conducted on a sample of 50 Indian Air Force pilots indicate that they perceive themselves to be positive and leading fulfilling lives with average PWB. They evaluate themselves to have an average level of life satisfaction and are driven by high positive affect. Correlation between personality domains and PWB showed a negative correlation between

neuroticism and PWB which signifies that the pilots who perceive themselves to have higher levels of PWB score lower on neuroticism. The positive correlation between PWB and extraversion indicates that pilots who perceive themselves to be out-going and social have higher levels of PWB. This tendency is likely to help aviators to cope with occupational stressors and maintain high standards of work performance.

Certain aspects of PWB have also been shown to be related to other characteristics of personality, such as novelty seeking, harm avoidance, and reward dependence. These three dimensions of personality were coined by Cloninger (1987) as part of his biosocial theory of personality. Cloninger (1987) argued that these three personality traits were genetically independent of each other and interact with the environmental stimuli in a predictable way. For example, the novelty seeking personality is characterized by ―intense exhilaration or excitement in response to novel stimuli or cues for potential rewards or potential relief of punishment, which leads to frequent exploratory activity in pursuit of potential rewards as well an active avoidance of monotony and potential punishment (Cloninger, 1987). The harm avoidance personality is described as ―a tendency to respond intensely to signals of aversive stimuli, thereby learning to inhibit behavior and avoid punishment, novelty, and frustrative non rewarding (Clonginger, 1987). Lastly, reward dependence is argued to be ―a tendency to respond intensely to signals of reward, and to maintain or resist extinction of behavior that has previously been associated with rewards or relief from punishment‖ (Cloninger, 1987). These three personality dimensions of novelty seeking, harm avoidance, and reward dependence have been shown to be related to dimensions of PWB in a study conducted by Ruini et al. (2003). In this particular study, a sample of 450 adults in the general population completed self-report assessments of PWB (Ryff, 1989) and personality characteristics using Cloninger's Tridimensional Personality Questionnaire (1987). Bivariate correlations

between all study variables were computed to examine the relationships between PWB and personality.

Ruini et al. (2003) reported that the personality characteristic of novelty seeking was positively related to the PWB dimensions of personal growth and positive relations. Thus, participants who reported that they liked to seek out new experiences in search of potential rewards were also likely to report a sense of continued growth at an individual level and had positive relations with others. It was also found that the personality characteristic of reward dependence, or a greater sensitivity to rewards, was positively related to the PWB dimensions of positive relations and autonomy. In other words, participants who reported themselves to be particularly responsive to reward reported more positive relations and feelings of autonomy. Finally, it was found that the personality characteristic of harm avoidance, which is some what similar to neuroticism, showed negative correlations with all six dimensions of PWB (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance). Therefore, participants who reported behavioral inhibition as a means to avoid punishment or negative feelings also reported lower levels of PWB. Schmutte and Ryff (1997) tried to replicate the earlier findings regarding the relationships between personality and PWB, but many of these relationships were found to be weaker or non-significant after controlling for ―noise‖ variance. For example, the personality characteristics of neuroticism and extraversion were significantly related to all six dimensions of PWB before controlling for measurement overlap. When the emotional underpinnings of the well-being dimensions were removed by partialing out current affect, however, the authors found that some relationships remained significant while others were non-significant. For example, the correlations between neuroticism and the PWB dimensions of self-acceptance and environmental mastery remained significant, while the relationships between neuroticism and other aspects of

PWB became non-significant. The relationship between the personality characteristic of extraversion and the PWB dimensions of personal growth and positive relations with others also remained significant while the relationships between extraversion and the other four dimensions of PWB became non-significant. Schmutte and Ryff (1997) argued that taken together, these results suggest that ―personality provides instrumental avenues through which different aspects of well-being are achieved‖ (p. 557). It is important to note that some PWB outcomes such as personal growth and positive relations with others significantly correlated with more than one personality characteristic. This may provide some evidence to suggest that the relationships between personality and PWB may not be straightforward in the sense of one personality characteristic corresponding to one PWB outcome. Perhaps a personality profile, consisting of more than one personality characteristic, might help in determining certain predispositions that may be interacting with other environmental factors to contribute to PWB. The results from the study conducted by Schmutte and Ryff (1997) strongly suggest that PWB is distinct from, but meaningfully influenced by, personality. This interpretation of the relationship between PWB and personality is also supported by Ruini et al. (2003), who used exploratory factor analysis to show that well-being, distress, and personality are separate, but related constructs. Thus, PWB does not seem to be simply a report of one's personality characteristics. In fact, PWB seems to represent a subjective evaluative assessment of oneself and one's life in particular domains (for example, autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self-acceptance) that includes those areas of functioning that are not covered by SWB measures of happiness and life satisfaction (Ryff & Keyes, 1995).

From the above literature it is clear that personality determines the level of well-being (both subjective and psychological) experienced by the individual. Personality plays an important role

in the way a person perceives and reacts to a situation, particularly a stressful one. Since, Military is a physically and psychologically demanding job, a soldier's personality will be crucial in deciding how satisfied and meaningful he perceives his life to be. Hence Personality as a variable, which has been unexplored in this context, has been included in this current study.

2.6 Resilience

The word resilience originates from the Latin verb resilire, or ''to leap back,'' and is defined in the Oxford Dictionary of English as being ''able to withstand or recover quickly from difficult conditions'' (Pearsell et al., 2006, p. 1498). The roots of this term lie in science and mathematics; for example, in physics, resilience is considered to be the ability of a strained body, by virtue of high yield strength and low elastic modulus, to recover its size and form following deformation (Fletcher & Sarkar, 2013). Lazarus (1993) cited the example of elasticity in metals, with a resilient metal bending and bouncing back (instead of breaking) when stressed. When used in human context, various definitions of resilience have been proposed in the psychology literature. According to Bonnano, (2004, p. 20-21), resilience is, "The ability of adults in otherwise normal circumstances who are exposed to an isolated and potentially disruptive event such as the death of a close relation or a violent or life threatening situation to maintain relatively stable, healthy levels of psychological and physical functioning, as well as the capacity for generative experiences and positive emotions". According to Lee and Cranford (2008, p. 213) resilience is, "The capacity of individuals to cope successfully with significant change, adversity or risk". "An individual's stability or quick recovery (or even growth) under significant adverse conditions" is how Leipold and Greve (2009, p.41) view resilience. It is the study of psychological resilience that aims to

understand the reason why some individuals are able to withstand – or even thrive on – the pressure they experience in their lives. Over the past two decades psychologists understanding of human functioning in stressful situations has developed rapidly and resilience has been examined across a range of contexts like business organizations (Riolli & Savicki, 2003), education (Gu & Day, 2007), military (Palmer, 2008), sport performance (Galli & Vealey, 2008), and communities (Brennan, 2008).

Most definitions of resilience are based around two core concepts namely: adversity and positive adaptation. Regarding the term adversity, Luthar and Cicchetti (2000) stated that adversity ‘‘typically encompasses negative life circumstances that are known to be statistically associated with adjustment difficulties’’ (p. 858). This approach employs a definition of adversity which is closely associated with the notion of risk, where as other researchers define adversity as any hardship and suffering linked to difficulty, misfortune, or trauma (Jackson, Firtko, & Edenborough, 2007). As guest editors of a special edition of the Journal of Personality on ‘‘Resilience in Common Life,’’ Davis, Luecken and Lemery-Chalfant (2009b) proposed that ‘‘for most of us, the adversities we encounter do not constitute major disasters but rather are more modest disruptions that are embedded in our everyday lives’’ (p.1638). Davydov et al. (2010) speculate that resilience mechanisms may differ in relation to contextual severity, ranging from resilience against regular every day hassles like work stress (i.e., mild adversity) to resilience against occasional extensive stress such as bereavement (i.e., strong adversity). Thus, as Luthar et al. (2000) emphasized, it is important that researchers should clearly outline their definition of adversity and provide a reasonable explanation for its use. A more fundamental issue in this area of resilience research is the negative connotations attached with the term ‘‘adversity’’ (Wilson & Agaibi, 2005; Vanderbilt-Adriance & Shaw, 2008). As noted above, existing definitions of

adversity associate negative circumstances with negative consequences or, by the use of high risk-related terminology, focus on statistically significant predictors of maladjustment. However positive life events that are not typically associated with a higher probability of undesirable outcomes can also be relevant in defining resilience. For example, a job promotion, which is very unlikely to be labeled as an adversity will require resilience characteristics in positively adapting to the new and unique demands inherent to the role. Similarly, newlywed couples entering a marriage, which again is unlikely to be classified as a risk event, are required to display a range of relationship resources (for example problem-solving and support-seeking behaviors) to work their way through marital stressors (Neff & Broady, 2011). Moreover, when adversity is defined as an event that predicts maladjustment it precludes the inclusion of many ongoing daily stressors under the framework of resilience, despite a growing body of evidence which suggests to the contrary (Davis, 2009a; Neff & Broady, 2011).

Positive adaptation has been defined as ‘‘behaviorally manifested social competence, or success at meeting stage-salient developmental tasks’’(Luthar & Cicchetti, 2000, p. 858) or ‘‘symptoms related to internal well-being’’ (Masten & Obradovic´,2006, p. 15). Luthar et al (2006) assert that the indicators used to represent this concept must be appropriate to the adversity examined in terms of the domain being assessed and the stringency of criteria that is used. For example, for school children an indicator of positive adaptation might be academic achievement, whereas for military personnel a more appropriate indicator would be the absence of psychiatric symptoms. As far as the stringency of the criteria is concerned, the nature of the adversity should determine whether an individual needs to demonstrate excellent or average levels of competence. More specifically, for an individual exposed to a serious life adversity, for example terrorist attacks, it is appropriate to define competence in terms of the absence of psychiatric diagnoses rather than evidence of

excellent functioning. An important, yet often overlooked, issue when examining positive adaptation is the sociocultural context in which an individual operates (Clauss-Ehlers, 2008; Mahoney & Bergman, 2002; Waller, 2001). Ungar and Lienberg (2011) argued that resilience research has predominantly defined positive adaptation from a Western psychological perspective with an emphasis on individual and relational capacities, such as academic success and healthy relationships. According to them these outcomes lack sensitivity to cultural factors that contextualize how resilience is defined by different populations and manifested in different practices. This argument is supported by Mahoney and Bergman (2002) who state that the specific sociocultural conditions in which an individual functions must be considered when examining competence, and that ‘‘failing to do so may lead to a view of positive adaptation as a static phenomenon with relevance to only a minority of persons in select circumstances’’ (p. 212).

In a study by Souri and Hasanirad (2011) where four hundred fourteen students of medicine (213 male and 191 female) were selected using cluster sampling and were required to fill up the Ryff Scale of Psychological Well-Being (RSPWB), Connor-Davidson Resilience Scale (CD -RISC), and Scheier and Carver’s Life Orientation Test (LOT). The results indicated that resilience was a predictor of psychological well-being, and optimism played a minor mediation role in the relationship between resilience and psychological well-being. Carver, Scheier, and Segerstrom (2010) and Miller et al. (2010) found similar results in their studies as well. Ryff and Singer (2003) argued that resilient individuals were generally capable to maintain their physical and psychological health and had the ability to recover more quickly from stressful events. This strengthened the construct of resilience which was defined as “a personality characteristic that moderates the negative effects of stress and promotes adaptation” (Wagnild & Young, 1993) and as “the ability to restore or maintain internal or external equilibrium under significant threat by

means of human activities including thought and action" (Smith & Carlson, 1997). Sagone and De Caroli (2013) in their study found that the more the middle adolescents experienced high levels of resilience, the more they felt able to cope with novelty in various areas of human functioning and, especially in scholastic context thereby reducing the possible risk of maladaptive outcomes. Picardi et al (2012) found that PWB was positively correlated with dispositional resilience (measured using the three factors of commitment, control, and challenge), except for the dimension of autonomy. The results of a study by Sagone and Caroli (2014) showed positive relationships between Psychological well-being (environmental mastery, personal growth, and self-acceptance) and resilience. The more the adolescents were able to choose contexts suitable to personal needs, to see themselves as growing and expanding, and to perceive themselves as self-satisfied, the more they were resilient. Boys expressed a greater well -being (environmental mastery and self-acceptance) than girls and late adolescents showed a greater well-being (personal growth and purpose in life) than middle ones. Resilient youth tend to have strong social skills and interpersonal communication (Hollister-Wagner et al., 2001; Howard & Johnson, 2000; Luthar & Zigler, 1991; Smith & Carlson, 1997; Werner, 1995). Also evident are humour, empathy, flexibility, and an easygoing temperament, all of which are likely to enhance sociability (Fraser, Galinsky, & Richman, 1999; Levine, 2009; Richardson, 2002; Rutter, 1985).

Studies have shown resilience to be positively correlated with greater social engagement, higher optimism, stronger grip strength, and functional independence (Hardy, Concato & Gill, 2004; Lamond & Proverbs, 2009; Wagnild, 2003; Wells, 2009). Conversely, resilience has also been found to be negatively correlated with poor mental and physical health conditions, such as increased depressive symptomatology, post-traumatic stress disorder, and physical disability (Burns & Anstey, 2010; Connor, Davidson, & Lee, 2003; Hardy, Concato & Gill, 2004; Mehta et

al., 2008). Supportive results were reported by Schure, Odden and Goins in 2013 where it was revealed revealed that higher levels of resilience were associated with lower levels of depressive symptoms, chronic pain and with higher levels of mental and physical health. In a study of well-being of managers in work organizations by Srivastava (2009), resilience was one of the many individual factors responsible for the psychological well-being at the workplace among police personnel. Resilience was found to be significantly positively correlated to psychological well-being, life satisfaction, social well being and altruism.

Resilience as a variable finds inclusion in this study because a soldier's life is challenging both at a personal and professional level. It is very important thus for the soldier to rise up and move beyond the hardships to be able to do justice to a very demanding job and still be able to maintain a level of subjective and psychological well-being. The current literature states a relationship between resilience and well-being. Due to a lack of evidence with regard to the Indian soldiers, this study will explore this relationship further.

2.7 Leadership

According to the Military leadership field manual (1965), Military leadership is the art of influencing and directing men in such a way as to obtain their willing obedience , confidence , respect, and loyal cooperation to accomplish the mission (Rogers, 1965). As per John Wickham (1987), Military leadership refers to achieving understanding and commitment of subordinates for the accomplishment of purposes, goals, and objectives envisioned by the leader, beyond that which is possible through the use of authority alone. Army Management philosophy (1992, p.3) defines military leadership as "the process of influencing others to perform a task through providing

purpose, direction and motivation" (Zimmerman, 1992). Horn & Walker in the Canadian Military Leadership Handbook (2008) have defined effective leadership as directing, motivating and enabling others to accomplish the mission professionally and ethically, while developing or improving capabilities that contribute to mission success.

Before delving into the phenomenon of military leadership it is important to analyze how military leadership is different from leadership in civilian organizations. Keller (2014) states that the specific characteristics of the military , i.e. the threat and organized use of force to achieve political goals , distinguishes it from all other organizations, even though a large number of factors increase its similarity to major civilian organizations. The intention of a threat or the use of force is to gain an upper hand over an opponent. The forces deployed by a military organization have are focused in such a manner in terms of space and time, that they will render the organization superior. Consequently, it is essential that the organization is in a position to direct the maximum force possible at a vital point at the right time. This requirement has led to the development of the single line system, which most strongly reflects the principle of the unity of ordering (Kieser & Walgenbach, 2003). Each organizational element has only one superior element entitled to issue orders. This is the reason for the distinct hierarchy that is a typical feature of all military organizations. Lippert, Schneider and Zoll (1978) point out another difference from civilian organizations, that the duty of the military superior is characterized by issuing orders and leading people, not by administering or supervising. The latter may include the former but at the same time goes beyond it. In the single line system, military superiors have clearly far more reaching powers and authorities than their counterparts in civilian organizations. Non-compliance with an order for instance, is considered disobedience and will at least result in a disciplinary action being taken (if it has serious consequences, it will even be considered a military offence and legal measures will

be taken). The integration into a strict hierarchy, the superior's extensive authority, which reaches as far as the subordinate's leisure time and personal life, and the high degree of control make the military as a total institution.

Military operates in two very different environments, peace and war. In times of peace, the military's organizational objective is the systematic training of a large number of people for their assignment in a contingency situation (Wilkinson, 1968). The armed forces act as a major training organization that functions in accordance with a particular standardized order, i.e. laws, rules and regulations similar to a bureaucracy model (Avolio, Walumbwa, & Weber, 2009). On the other hand, in a situation of contingency, there is a totally different model of leadership. Depending on the conflict's intensity, the organization's environment can become increasingly chaotic. The leadership complies less and less with the pre-defined bureaucracy model. This however does not apply to all parts of the organization to the same extent. The chaotic environment only has an impact on the organization's lowest elements, because that is where the fight with the enemy takes place. The further the organizational elements are from this side of the conflict, the more stable is the organizational environment. This context requires a different type of leader, one who is more likely to fulfill the requirements of charismatic denomination. Roghmann and Sodeur (1968, p.224) have already pointed out that the domination exercised by military leaders "can be based on such different aspects like the tradition, the charisma or the rational bureaucracy in the particular social situation of the total institution."

Army leaders must learn to fulfill expectations of all soldiers including other leaders. Field Manual 22-100 (1998) of the United States Army addresses some of these fundamental expectations: 1. Demonstrate tactical and technical competence: Soldiers expect their leaders to be tactically and technically competent. They want to follow leaders who are confident of their own abilities. To be

confident a leader must first be competent. Trust between soldiers and their leaders is based on the secure knowledge that the leader is competent. 2. Teach subordinates: In training, leaders must move beyond managing programs or directing the execution of operations. Leaders must take the time to share with subordinates the benefit of experience and expertise. 3. Be a good listener: Leaders must listen with equal attention to their superiors and subordinates because they are responsible for solving the problems of the soldiers. 4. Treat soldiers with dignity and respect: Leaders must show genuine concern and compassion for the soldiers they lead. It is essential that leaders remain sensitive to family members and include them in unit activities to the extent possible. Respect is a two way street. A leader will be accorded the same level of respect that he or she shows for others. 5. Stress basics: Leaders must demonstrate mastery of fundamental soldiering skills such as marksmanship, first aid, navigation, as well as the requisite skills for their particular specialty and be able to teach them to their soldiers. 6. Set the example: Leaders should abide consistently with the highest values of the military profession and its institutions. They encourage within their soldiers a commitment to the same values. Leaders take pride in selflessly dedicating their service to ensure mission accomplishment. They are aware that they are always on parade-24 hours a day, seven days a week- and that all their actions set personal and professional examples for subordinates to emulate. 7. Set and enforce standards: A leader must know, and always enforce, established Army standards. Perhaps the most fundamental standard which must be maintained is discipline. Soldiers must promptly and effectively perform their duty in response to orders or in the absence of orders take the correct action (Smidt, 1998).

The fact that leaders have the power to influence the motivation and performance of soldiers is well accepted within military and civilian communities. As a consequence the military devotes considerable resources to leadership development so as to enhance the effectiveness of the

organization. Although leadership is undoubtedly important for motivation and performance, it also has an impact on soldier health and adaptation to stressful environments. There is widespread consensus in the literature that social support, from both family and coworkers (and particularly leaders), is an important determinant of how intensely the stressors impact personal stress and well-being of an individual (Carlson & Perrewé, 1999; Viswesvaran, Sanchez, & Fisher, 1999). Meta-analytic evidence suggests that lack of social support is the single largest risk factor for developing PTSD after undergoing a traumatic experience (Brewin, Andrews & Valentine, 2000). It has been established that the protective effects of social support against PTSD in soldiers are significant even when individual difference factors such as locus of control and coping style are controlled for (Solomon, 1988). Research also indicates that the behavior and affect of leaders can impact how their subordinates feel (Brief & Weiss, 2002; Skakon, Nielson, Borg, & Guzman, 2010). The empirical literature reflects that studies of positive leadership styles (for example, transformational, empowering, supportive leadership and so on) predict greater wellbeing (Kuoppala, Lamminpää, Liira, & Vaino, 2008; Nielson, Randall, Yarker, & Brenner, 2008; Van Dierendonck, Haynes, Borrill, & Stride, 2004) and reduced stress in subordinates (Offermann & Hellmann, 1996; Seltzer & Numerof, 1988). A recent meta-analysis found that destructive leadership was associated with lower well-being, increased stress, and poorer performance among followers (Schyns & Schilling, 2013).

Leaders can have a positive impact on the stress and well-being levels of their followers by developing a sense of trust and self-efficacy (Liu, Siu, & Shi, 2010) or making the followers feel that their work has a purpose or meaning (Arnold, Turner, Barling, Kelloway, & McKee, 2007). By showing their followers that they have adequately prepared for potential stressors by providing clear team goals, defining expectations of team members, and laying out a strategy, leaders can

reassure their team members when unexpected events happen (Zaccaro, Rittman, & Marks, 2001). Another scope of influence is the leader mood contagion which suggests that leaders characterized by positivity or charisma can convey an infectious sense of excitement and optimism to their subordinates which can change the atmosphere or climate of their work group (Sy, Côté, & Saavedra, 2005). This leads to an increase in the individual and group performance (Bono & Ilies, 2006). Similarly, when leaders communicate to followers that they have no value, deprive them of personal control over their work, or undermine them then the expected outcome is frustration, emotional exhaustion, resentment, retaliation, decreased performance and well-being (McColl-Kennedy & Anderson, 2002; Schyns & Schilling, 2013; Tepper, 2000).

Emotionally intelligent leaders can create a climate that enhances performance in the group by modeling positive emotional regulation and being sensitive to the emotional well-being of their followers (Boyatzis, Koman, & Wolff, 2007). Even though there is a general resistance when it comes to the expression of emotions in masculine-oriented professions such as military but the capacity of an emotionally intelligent leader to display emotions such as anger at appropriate times may prove very effective for motivating the followers (Lindebaum & Fielden, 2011). A similar line of thinking comes from S.L.A. Marshall's book on military leadership where he declared that ''too much has been said in praise of the calm demeanor as an asset to the fighting commander'' (Marshall, 1947, p. 138). The ability to regulate emotions is often mentioned as a key characteristic of effective military leaders. Mental Health Advisory Team (MHAT-5,2008) demonstrated that a positive leadership climate was slightly related to mental health problems of service members who do not experience combat (Setiasih & Jayanti, 2018). On the other hand leadership climate was associated with almost halving the rates of psychological and emotional problems in troops

who had experienced a great deal of combat. In the Indian context a study by Sharma (2015) found that ineffective leadership was a stressor amongst the soldiers in the Indian Army.

Indian Army is based on a regimented system where obedience to the leadership is mandatory at all levels without question. Research literature clearly signifies that the quality of leadership has a strong effect on the well-being of the subordinates. In military, leader-follower relationship is a very important one which can have life and death implications. Currently there is less empirical evidence available about the quality of leadership in the military and it's impact on the subjective and psychological well-being of soldiers in Indian Army. Due to the same reason this variable is important for the current study.

2.8 Unit/Group cohesiveness

The literature to date considers cohesion to be best described in terms of two components: task cohesion and social cohesion (MacCoun & Hix, 2010). Task cohesion concerns with the shared commitment among members to achieve a goal that requires collective efforts of group members. On the other hand, social cohesion refers to the quality of interpersonal relationships that the group members share – for instance whether members would provide material and emotional support to each other. Both task and social cohesion can have two different referent groups – (1) peer members of the primary group, that is, peer-to-peer relationships (horizontal cohesion) and (2) leaders of the primary group or peer-to-immediate leader relationships (vertical cohesion), (Griffith, 1988; Siebold & Kelly, 1988). MacCoun and Hix (2010) described certain aspects of cohesion that are prominent in more recent research which include: group pride or individual identification to the collective group; morale and esprit de corps; collective efficacy or group

potency. Group pride refers to the degree of a group member's identification with the group (Dion, 2000; Griffith, 2009; Mullen & Copper, 1994; Shamir, Brainin, Zakay, & Popper, 2000). Synonymous terms used when referring to cohesion often include morale and espirt de corps. Manning (1994) clarified a distinction between these two terms. Morale describes the enthusiasm and persistence of an individual in engaging in behaviors prescribed by group membership, while esprit de corps is the degree of cohesiveness among higher organizational entities. Collective efficacy (Bandura, 2000) is a more recent construct about how group members see themselves as cooperatively achieving the shared goals of the group. The greater the shared expectancies, the greater group efforts can attain the desired effects. Some military studies show that these perceptions contribute more to group performance than other aspects of cohesion (Jordan, Field, & Armenakis, 2002; Shamir et al., 2000). The construct of trust that occurs at various levels in the organization has also been discussed in the context of the development of cohesion in a group. Trust may be defined as having confidence that the trusted entity will behave as expected in a situation. Trust as a construct can be applied to individual members (i.e., fellow soldier performs duties to provide safety for others) and members as a whole (i.e., higher headquarters provides equipment and materials as promised). Trust hence, can refer to the individual's trust in his fellow soldiers, in the leaders, and in the organization and institution as a whole (Griffith, 1988; Siebold & Kelly, 1988). The expectations in trust are based on well-defined roles of the trusted individuals or entities. Evidence also suggests that trust can develop quickly among group members based on the other individual's membership in trustworthy groups (e.g., medical professionals), role-based trust (e.g., senior rank which is an indicator of past experience and knowledge), and rule-based trust (e.g., shared norms about what is expected in terms of behaviors) (Kramer, 1999; Majchrzak, Jarvenpaa, & Holingshead, 2007).

The Department of Defence researchers explain cohesion as the bonding of soldiers so as to sustain their will and commitment to one another and the mission accomplishment despite environmental barriers e.g. intra-group factions, turbulence, demands of combat, mission stress etc. For them cohesion is one of the most important aspects of group dynamics that facilitates team performance and protects the team members (unit) against psychiatric break down in combat. Psychologists from the Department of Defence in their research found that the initial bonding that soldiers went through among themselves was based on fairly superficial lines that were defined by a common demography. The deeper levels of bonding which ultimately leads to cohesiveness is dependent on more qualitative factors e.g. similar attitudes. Even though a great deal of morale and cohesion is dependent on demography. Demography concerns race, culture, and any other parameter that groups can identify with in terms of a specific geographical region (Lee & Farh, 2004).

Authors and researchers from the Army War college and the Naval War College additionally, speak of a common shared purpose that binds individuals together and motivates them. The Army war college calls it cohesion and defines it as being characterized by pride, loyalty and a shared understanding of a common purpose and most importantly a collective confidence in this common purpose (Wong, 1985). On the contrary for The Naval war college review the definition is founded in leadership which is "bound together" with morale, for example a leader's confidence in his troops and vice versa (Neves, 1995).

For a soldier, it is essential that in combat he is respected and is able to experience bonding as a part of a well-knit group. S.L.A Marshall spoke about the cohesion and morale of soldiers, stating that units won't adhere in combat whether trained or not if they lack the tactical unity in relation to personal knowledge and a sympathetic understanding of each other (Scull, 1990). The major aspect which enables an infantry soldier to keep going in his combat is the near presence or the

presumed or perceived presence of a comrade. His morale is sustained by his fellow soldiers and his weapons. In fact given a choice, the common soldier would rather be unarmed and with friends than possessing the most advanced weapon and be alone (Marshall, 1947).

During the training period before the actual warfare, patriotism and belief in the shared cause were important factors for the development of the Unit cohesion. But these had little effect on unit cohesion during the actual period of combat (Cox, 1995). Shils and Janowitz (1948), in their classic study of the German Wehrmacht during World War II, concluded that the army's continued resistance in the face of overwhelming odds could be assigned mainly to the solidarity that the members of small groups of soldiers shared: "When the individual's immediate group, and its supporting formations, met his basic organic needs, offered him affection and esteem from both officers and comrades, supplied him with a sense of power and adequately regulated his relations with authority, the element of self-concern in battle, which would lead to disruption of the effective functioning of his primary group, was minimized" (p. 281). Shils (1950) found the same to be true for the American Army in World War II. He reported that the cohesive primary group "served two principle functions in combat motivation: it set and emphasized group standards of behavior and it supported and sustained the individual in stresses he would otherwise not have been able to withstand" (p. 25). In a more recent study, Vaughan and Schum (2001) examined 20 published narrative accounts of American combat soldiers who fought the Vietnam War. Most common reasons why American combat soldiers fought this war were: for members of their primary group (e.g., squad), for respected and valued leaders, out of a sense of duty, and for survival. These reasons are further confirmed by observations of American soldiers during World War II (Traversa, 1995), the Korean War (Kellett, 1987; Little, 1964), the Vietnam War (Moskos, 1977), and the Iraqi War (Wong, Kolditz, Millen, & Potter, 2003). Studies by Gully, Devine, and Whitney

(1995) and Griffith and Vaitkus (1999) reported strong links between cohesion and performance when reported at the group level and not at the individual level. Griffith (2002) in his research found that a soldier's experience of supportive leadership and cooperative peer relationships both at the individual and group levels help in building their identification with the unit. It decreases the chances of their leaving the unit and the Army and increase their perceptions of being combat ready.

Unit cohesion has been established as a potentially modifiable factor in the etiology of mental illness and a protective factor in cases of post-traumatic stress disorder (PTSD), common mental disorder and physical ill health when it comes to military personnel (Oliver et al., 1999; Brailey et al, 2007; Rona et al., 2009; Manning, & Fullerton, 1988). On the contrary, little has been understood about the impact that unit cohesion has on alcohol misuse in military personnel (Williams et al., 2016). Alcohol has long been used by military personnel as a bonding tool and a coping device (Jones, & Fear, 2011). Williams et al. (2016) have found that high levels of comradeship and low levels of leadership were linked to heavy drinking. A 2012 study by Preez et al on unit cohesion and mental health in the UK Army personnel examined the link between unit cohesion, post- traumatic stress disorder, common mental disorder and alcohol abuse in soldiers deployed in Iraq. It was established that unit cohesion had a linear relationship with less portable PTSD and common mental disorder. The perception of the quality of leadership was associated with less portable PTSD and common mental disorder. Comradeship was associated with greater alcohol misuse among regular personnel. The feeling of being able to talk about their personal problems was associated with less alcohol misuse for reserve personnel. A study by Fontana, Rosenheck and Horvath (1997) on psychopathology among Vietnam veterans concluded that there was a non-linear moderating effect of unit cohesion on psychopathology. Some studies

also found support for a linear moderating effect of unit cohesion on life experiences when it came to the etiology of PTSD (Oliver et al., 1999; Fontana, Rosenheck, & Horvath, 1997).

There is a considerable dearth of literature about unit cohesion and subjective and psychological well- being amongst soldiers not currently in a war situation both internationally as well as in India. Units offer a supportive network to the soldiers both physically and psychologically in the absence of other primary support networks. The climate of the unit whether cohesive or conflictive will have an effect on the well-being of the soldiers. Hence the need to explore it in detail in our study.

The next chapter will propose and discuss theoretical models derived based on the literature review. The variables identified in this chapter will be sorted into risk and protective factors for soldier's well-being and also how they interact to influence well-being.

Chapter 3

Proposed Theoretical Models, Research Questions and Hypotheses

3.1 Introduction

Based on the review of literature on the variables that were included in the study due to their possible impact on the well-being (both subjective and psychological) of the soldiers, three theoretical models were proposed namely: risk factors model, protective factors model and the moderated models of soldier well-being.

3.2 Risk Factors Model

This model proposes to identify the potential risk factors to a soldier's well-being. The variables of social isolation, occupational stress and death anxiety were included in this model as independent variables. The effect of these on the subjective and psychological well-being of the soldiers will be studied making them the dependent variables in this model. In general, the literature shows that social isolation, occupational stress and death anxiety have a negative impact on the well-being levels in different populations. For example, social isolation has been associated with increased risk of depressive symptoms, suicide attempts, and low self-esteem in young people (Hall-Lande et al., 2007). More recent research explored possible direct biological effects of social ties on human physiology, perhaps by stimulating the immune system to ward off illnesses more effectively (Seeman, Singer, Ryff, Dienberg Love, & Levy-Storms, 2002) to the ability to survive a natural disaster (Pekovic, Seff, & Rothman, 2007). Some researchers have reported an

association between limited social ties, poor overall health and wellbeing (Chappell, 1991; Krause, Herzog, & Baker, 1992; Lubben, Weiler, & Chi, 1989). Occupational stress can manifest itself as psychological distress, depression, anxiousness, passiveness/ aggressiveness, boredom, loss of self-confidence and esteem, loss of concentration, feelings of futility, impulsiveness, disregarding of social norms and values, dissatisfaction with job and life, losing contact with reality, and emotional fatigue (Vokic & Bogdanic, 2007). Occupational stress, if not managed properly, can lead to chronic fatigue, musculoskeletal disorders, cardiovascular diseases, burnout, post-traumatic stress disorder, disintegration of personality, and suicide (Pestonjee & Shweta, 2000; Caverley, 2005; Kavanagh, 2005). Death Anxiety has been found to be significantly and positively correlated with depression (Lonetto & Templer, 1986) to the point that the alleviation of depression actually reduces death anxiety (Templer, Ruff & Simpson, 1974). Research has shown that there is a positive correlation between death anxiety and general anxiety (Abdel-Khalek, 1997, 1998, 2001; Templer et al., 1990). The times of heightened stress or threats to the health of self or loved ones can result in inefficient and pathological modes of coping in some cases (Yalom 2008). Due to this death anxiety is considered to be a basic fear underlying the development and maintenance of various psychological conditions (Vess & Arndt, 2008; Furer & Walker, 2008; Strachan et al., 2007).

Since these variables are an integral part of a soldier's everyday life coupled with the fact that there is scant research available in this area hence these variables are included as potential risk factors in this model. These three factors can have a strong impact on a soldier's life and well-being levels if we go by what the current research literature says. In fact their cumulative effect on any individual can be disastrous. Their significance is multiplied when not just an individual's life

but national security is at stake. No country can afford to put its first line of defence at risk. This makes these variables extremely relevant. Hence the significance of this risk factor model.

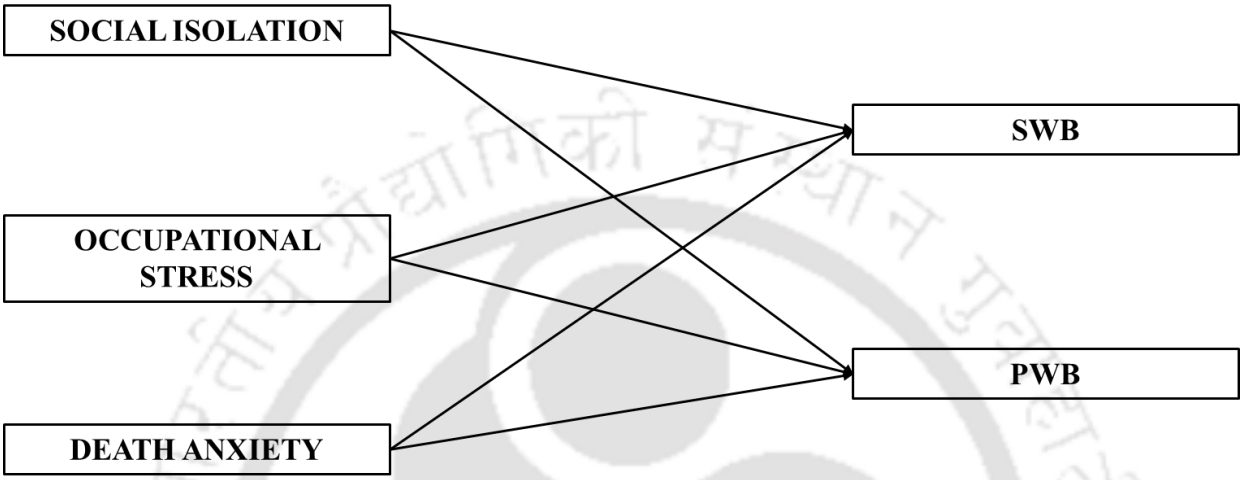

Fig 3.1. Risk factors model

Following research questions and hypotheses are proposed based on the risk factors model-

1.Do social isolation, occupational stress and death anxiety act as risk factors in the context of an Indian soldier's subjective and psychological well-being?

H1: Social isolation will negatively impact both SWB and PWB.

H2: Occupational stress will negatively impact both SWB and PWB.

H3: Death anxiety will negatively impact both SWB and PWB.

3.3 Protective Factors Model

This model proposes to identify the potential protective factors to a soldier's well-being. The variables of personality, resilience, leadership and group cohesion were included in this category as the independent variables. The effect of these on the subjective and psychological well-being of the soldiers will be studied making them the dependent variables in this study. The literature generally indicates that these factors have a positive impact on the well-being levels in different populations. For example, people with different personality traits tend to experience different degrees of subjective well-being. Individuals who are more extraverted, agreeable, conscientious, and emotionally stable tend to experience greater satisfaction with life, more frequent positive affect, and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). Scholtz (2003) reported that personality factors such as conscientiousness and neuroticism were significantly correlated with PWB and that both PWB and personality measures had a significant relationship with interpersonal and organizational deviance in Canadian Forces. The second potential protective factor of resilience was found to be positively correlated with dispositional resilience (measured using the three factors of commitment, control, and challenge) and PWB, except for the dimension of autonomy (Picardi et al., 2012). The results of a study by Sagone and Caroli (2013) showed positive relationships between Psychological well-being (environmental mastery, personal growth, and self-acceptance) and resilience. Resilience has also been found to be negatively correlated with poor mental and physical health conditions, such as increased depressive symptomatology, post-traumatic stress disorder, and physical disability (Burns & Anstey, 2010; Connor, Davidson, & Lee, 2003; Hardy, Concato & Gill, 2004; Mehta et al., 2008). Research on leadership has found that destructive leadership was associated with lower well-being, increased stress, and poorer performance among followers (Schyns & Schilling, 2013).

When leaders communicate to followers that they have no value, deprive them of personal control over their work, or undermine them then the expected outcome is frustration, emotional exhaustion, resentment, retaliation, decreased performance and well-being (Mc Coll-Kennedy & Anderson, 2002; Schyns & Schilling, 2013; Tepper, 2000). The empirical literature reflects that studies of positive leadership styles (for example, transformational, empowering, supportive leadership and so on) predict greater wellbeing (Kuoppala, Lamminpää, Liira, & Vaino, 2008; Nielson, Randall, Yarker, & Brenner, 2008, van Dierendonck, Haynes, Borrill, & Stride, 2004) and reduced stress in subordinates (Offermann & Hellmann, 1996; Seltzer & Numerof, 1988). The final factor of unit cohesion has been established as a protective factor in cases of post-traumatic stress disorder (PTSD), common mental disorder and physical ill health when it comes to military personnel (Oliver et al., 1999; Brailey et al, 2007; Manning, & Fullerton, 1988).

Most of these studies have been conducted on non-military samples and thus they can not be generalized to a military sample because of the fundamental differences between the two. At the preliminary level of understanding all of these four factors can be considered to play a protective role when it comes to subjective and psychological well-being of the soldiers. Due to this reason they have been selected to be a part of the protective factor model. The relevance of this model lies in the fact that it aims to yield an understanding of those potential positive factors in a soldier's life that can play a pivotal role in maintaining his subjective and psychological well-being levels in a difficult profession. This information can have important practical applications later on in terms of providing the necessary support framework to the soldier.

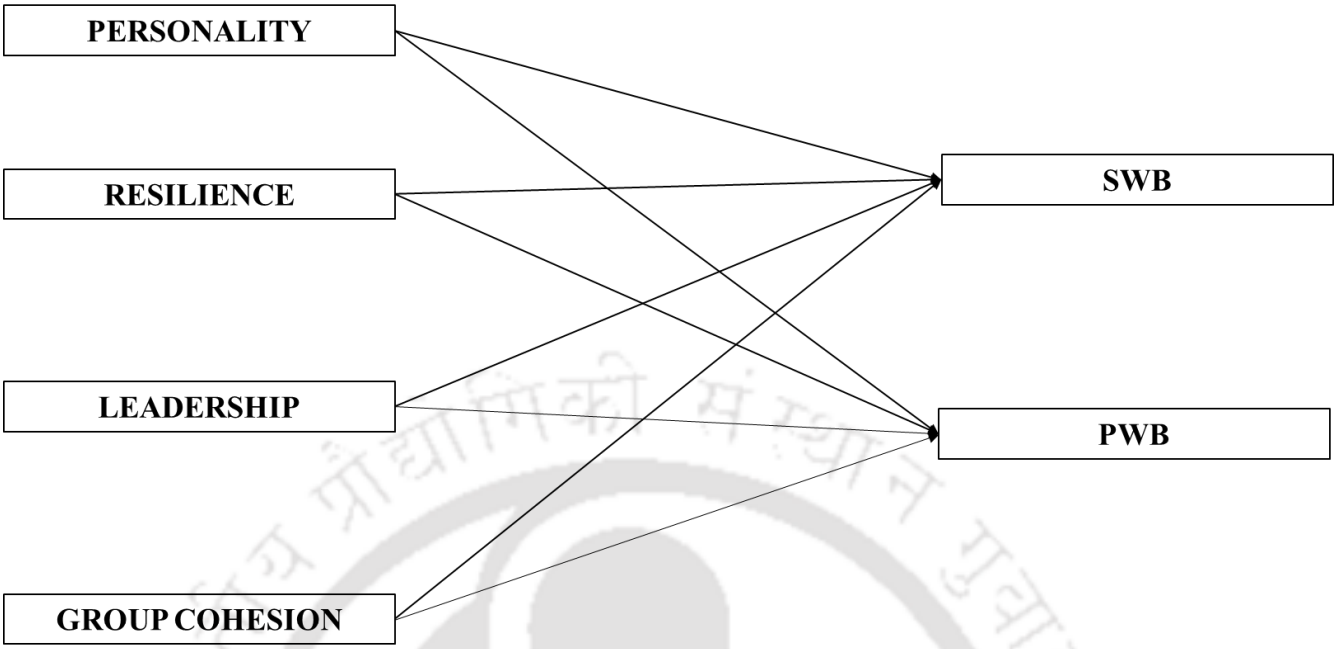

Fig 3.2. Protective factors model

Following research questions and hypotheses are proposed based on the protective factors model-

2.Do factors like personality, leadership, unit cohesion and resilience act as protective factors in the context of an Indian soldier's Subjective and Psychological well-being?

H4: Personality traits will impact both SWB and PWB.

H5: Resilience will positively impact both SWB and PWB.

H6: The quality of leader-follower relationship will positively impact both SWB and PWB.

H7: Group cohesion will impact both SWB and PWB.

3.4 Moderator Factors Model

This model aims to understand whether the protective factors of resilience, leadership and group cohesion play a moderating role when it comes to the relationship between the risk factors (social isolation, occupational stress and death anxiety) and subjective and psychological well-being. The model that served as a foundation for the construction of the moderator factor model was the "Soldier Emotional Well-being Model" by Bliese and Castro in 2003. This model dealt with risk factors like combat experiences, combat injury, deployment lengths and multiple deployments. The protective factors included personality, leadership, family support and training. The effects of these were seen on stress and post traumatic stress disorder, suicide, alcohol, substance abuse, performance and turnover amongst the soldiers.

In our study the risk and protective factor models will give an insight into the direct relationships between the independent and dependent variables while the moderator factor model will explain the interactions between risk and protective factors in determining the subjective and psychological well-being of soldiers. This is essential for understanding the complex dynamics of these factors in determining soldier's well-being. No factor, whether risk or protective, operates in isolation. In real life, both risk and protective factors interact continuously and influence outcomes. Therefore, moderator factor model will provide a better understanding of the complex dynamics of diverse factors affecting a soldier's well-being. Hence, for all practical purposes, it is important to understand these relationships for bringing grass root level changes to enhance the well-being levels of the soldiers. This is where the significance of the moderator factor model lies in this study.

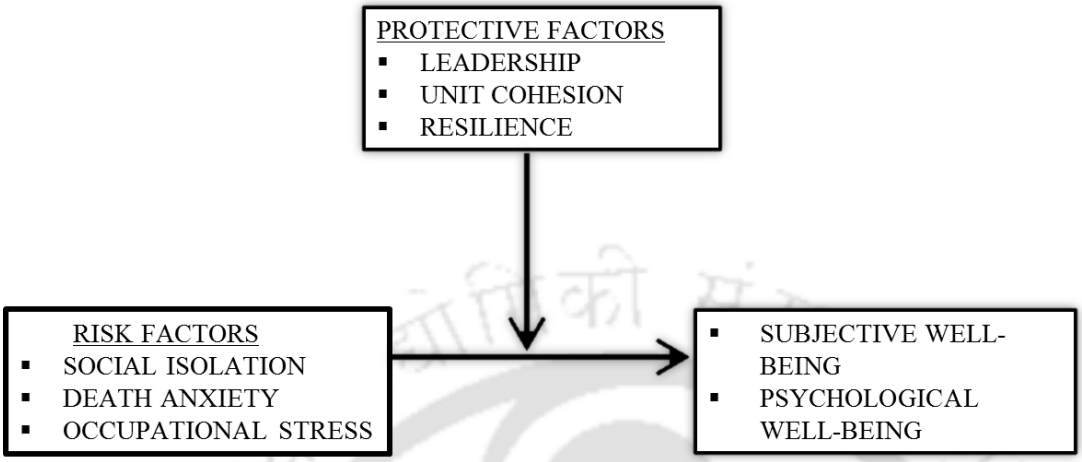

Fig 3.3. Moderator factors model

Based on this moderator factors model, following research questions and hypotheses are proposed-

3.In what ways do some protective factors (leadership, unit cohesion and resilience) mitigate the effects of the risk factors (social isolation, occupational stress and death anxiety) on the Subjective and Psychological well-being of an Indian soldier?

H8: Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H9: The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H10: Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

Chapter 4

Study 1: Development and Preliminary Validation of Occupational Stress Scale for Soldiers (OSSS)

4.1 Introduction

After taking stock of the current status of occupational stress amongst the soldiers in India and elsewhere, it is clearly evident that there is a lot to explore in this area. In a study by Bartone et al. (1998) it was found that the major military stressors that soldiers face during peace time missions were isolation, ambiguity, powerlessness, boredom and danger/threat. Personnel on active duty had poorer mental and physical health as compared to retired personnel (Boehmer et al., 2003). Florkowski and Fogel in 1999 found that the suicides amongst soldiers were an outcome of many complicated issues occurring simultaneously in their lives. Occupational stress that arises out of routine military work was found to have a significant detrimental impact on the mental health of military personnel (Pflanz & Ogle, 2006). These studies lend a strong background as to why this current study is important. It highlights the importance of understanding why it is essential to gain clarity about the stressors at work in a soldier's life even when he is not serving in border areas. Even though there are many standardized instruments to measure stress in civilian populations exists, there is hardly any such measures developed in the context of soldiers especially in the context of India. Recently, one study conducted by Sharma (2015) measured occupational stress in a military environment in the Indian context. That study was conducted on a sample of 415 soldiers and revealed lack of control at work, indifferent organizational attitude, job pressure, role conflict and inadequate awareness about the profession as the major stressors for the soldiers. It is

important here to note that despite the findings of the scale and parameters of its construction being reported as a research paper, the scale itself is not available in the public domain.

The study being undertaken now as part of this thesis aims to develop a standardized assessment instrument for occupational stress in soldiers over a larger pan India sample of soldiers. The objective of this study is to develop a reliable and valid scale to measure occupational stress in Indian soldiers, which would shed some light on the dominant stressors at work in peacetime postings in this population. This would lead to a better understanding of a population whose mental health and well-being has many implications for the country as a whole. In this chapter the research design of the study, process of scale development, the exploration of the various dimensions of the scale along with the establishment of the reliability and validity parameters of the scale are discussed.

4.2 Research Design

A mixed method research design was employed with both quantitative and qualitative approaches as far as study 1 is concerned. Since the prime focus of this study was to develop and validate an assessment instrument to measure the occupational stress levels in the soldiers, it was pertinent to identify the key dimensions of occupational stress in military life. This aspect remains unexplored in the current literature and thus inputs from experts with long careers in the military were incorporated during the scale construction process. This qualitative approach was later supplemented with a quantitative one during the process of measurement of the construct. Thus, a research design that could accommodate both these approaches was important for the fulfillment of this research objective.

According to Teddlie & Tashakkori (2009, p.31): “Mixed methods research is the type of research in which a researcher or a team of researchers combine elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purpose of breadth of understanding or corroboration.” This research seems to fit closely with the above definition of Mixed-Methods (MM) research. In addition to this, literature suggests that the studies that aim to develop an instrument to measure certain phenomenon are usually classified as mixed method studies. This is because the researcher, in such research, collects and analyses both qualitative and quantitative data, mixes the data and reports the study as a single mixed methods study (Ivankova, Creswell, & Plano-Clark, 2007). Thus, considering the that this is a scale development study involving a mix of both, qualitative and quantitative techniques, this study was classified as a Mixed-Methods research.

Mixed-Methods adds value to the research that a quantitative or qualitative approach alone cannot provide. It is argued that quantitative research does not allow a) voices of participants to be directly heard, and b) a discussion of the researcher’s own personal views and interpretations since the researcher stays in the background (Ivankova, Creswell, & Plano- Clark, 2007). A qualitative approach is said to overcome these weaknesses. Another major advantage of adopting a mixed-methods research is that it enables the researcher to ask both explanatory and confirmatory questions (Teddlie & Tashakkori, 2009). In other words, it allows the researcher to generate and verify a theory in the same study. For these reasons, MM research design was found to be appropriate for the first objective of our study.

Since MM research is a combination of qualitative and quantitate approaches, there are different types of research designs that determine how these two approaches are combined. There exists two major classifications. First, the research design can lend equal weight to both approaches by using

qualitative and quantitative data in a concurrent manner which is referred to as the Parallel Mixed Design (Teddlie & Tashakkori, 2009). The second approach which is known as the Sequential Mixed Design classifies one type of research approach (either qualitative or quantitative) as a primary source of data, which then extends through the other type of approach. Basically these two research designs differ on the basis of importance or weight assigned to the quantitative and qualitative research approaches (Creswell et al., 2008). Since this research involves a sequential use of both qualitative and quantitative approaches where quantitative builds on qualitative, it conforms closely to the definition of sequential mixed methods research design. Therefore from this point onwards only issues relevant to this design will be discussed in detail.

Teddle & Tashakkori (2009) suggest that when adopting a sequential mixed design, the researcher needs to sequentially plan the use of quantitative and qualitative research approach into two stages. The second stage is build up on the dataset generated from the first stage. Thus it is important for the researcher to ensure that the phases are complementary to each other to arrive at the required dataset.

There are three types of sequential designs design to choose from – explanatory, exploratory and embedded (Creswell et al., 2008). Exploratory design seemed most appropriate for this research where the quantitative research is built upon qualitative data and findings.

Many researchers recommend the use of an exploratory sequential design to develop and test an instrument that has not been developed before (Creswell, 1999; Creswell et al., 2009; Ivankova, Creswell, & Plano Clark, 2007). This is because a qualitative phase helps in developing and setting the foundation for the instrument after which it can then be empirically validated through quantitative techniques.

The exploratory sequential design has further two classifications namely: the instrument development model and the taxonomy development model. While researchers use Exploratory – Instrument development model when there is a need to develop and implement a quantitative instrument based on qualitative findings. The taxonomy model is usually adopted to develop and test an emerging theory using qualitative and quantitative methods. The instrument development model is more relevant to the aims of this research. When using the Instrument development model, the research topic is first explored qualitatively and then validated using quantitative techniques. For this research, this step was carried out in two stages of scale development process through interviews and expert panel review which provided a set of qualitative findings which acted as a guide and road-map to develop a list of items. In the second step, quantitative data was collected through an online survey. This data assisted in developing and validating the final scale. Fig 4.1 sums up the research design decisions.

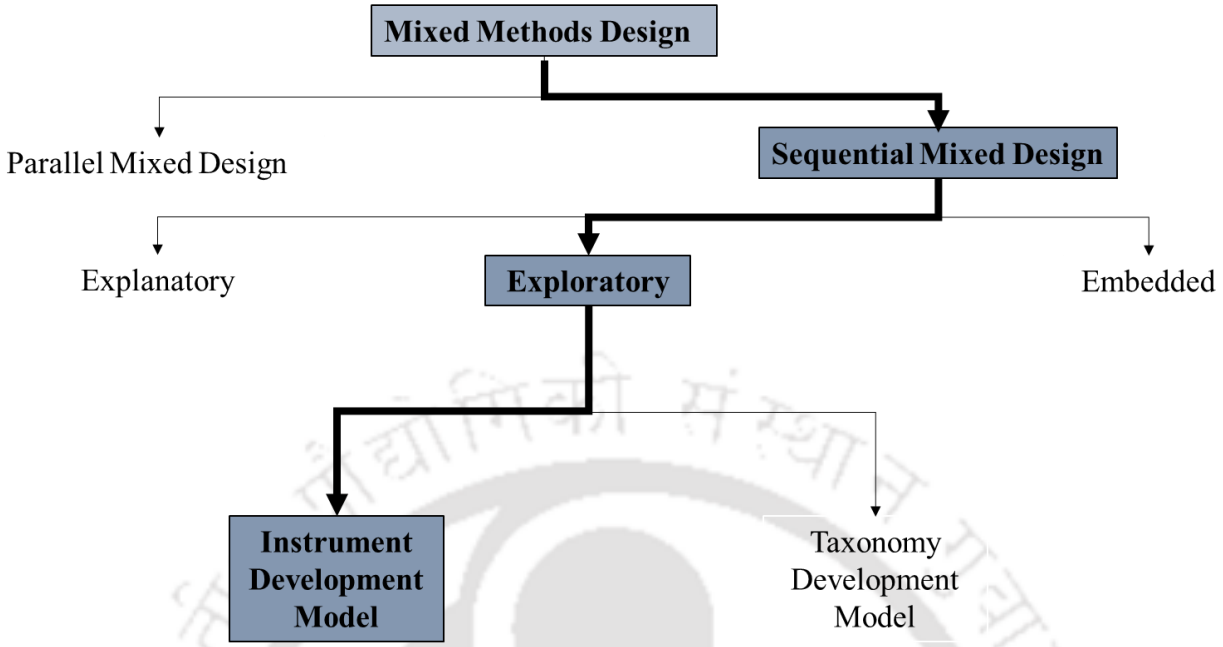

Fig 4.1. Research design decisions

This study (scale development) included the following phases-

4.3 Phase 1: Defining the construct and item generation

The scale development process started with gaining clarity about, "what is to be measured?" This leads the researcher to first define the construct to state exactly what is included in the definition and what is excluded (Hinkin, Tracey, & Enz, 1997). This leads the researcher to think clearly about the content of the scale (Slavek & Drnovsek, 2012). According to Hinkin, Tracey and Enz (1997), not only defining the construct is important but also determining how many dimensions it has. He suggests that the most common way to unveil the dimensionality of a construct is through a literature review. In our research the construct to be defined was *occupational stress of soldiers*.

It has been discussed in detail in the review of literature section along with the dimensions proposed by various researchers. Some items were generated based on the review of literature. Since there is not enough literature on what actually constitutes as occupational stress in terms of the military prospect, hence understanding the view point of the Army personnel was important. For this reason, telephonic interviews and email communications were made with 20 high ranking officers in the Army (ranks of Brigadier and above) who have served in commanding positions for 25-30 years. Because of their close ties with the soldiers in their commands/units they were able to provide valuable feedback in this regard.

Qualitative interviews with these senior Army officers were considered best for exploring the understanding of a soldier's life as they themselves have experienced all the phases of a soldier's life. An interview is defined as a method of data collection which involves a discussion between the interviewer and the respondent that focuses on the respondent's perspective towards the construct of interest (Rossman & Marshall, 1989). Since descriptive responses were needed, open-ended questions were deemed suitable for the purpose. This is because open-ended responses permit one to understand the world as perceived by the respondents (Patton, 1990). Interviews act as a personalized mode of communication between the interviewer and the respondent at a place deemed suitable for the respondent (which in our research was an online and telephonic mode of communication) (Piper et al., 1991). This helped in establishing a conducive environment to facilitate the discussion of the research questions in an informal manner (ibid) with specific focus on generating items for the scale under construction. The advantage of email and telephonic mode of communication in this case was the fact that the respondents could be contacted time and again for clarifications and elaborations. Secondly, since there was no limitation of time (as opposed to meeting them personally) they could reply in their free time that led to better involvement from

their end. Though this mode of communication suited both the parties well but it had its limitations. In some cases it was difficult to reach out to the participants when certain aspects of the construct needed to be probed. Secondly, the replies to the emails took a few days to come depending on the respondent's schedule which slowed down the everyday pace of the work. The interview data was transcribed on word-by-word basis to generate an initial list of dimensions that were to be used in generating the items of the scale.

In total 40 items were generated by carefully considering the literature and the feedback from the senior Army officers.

4.4 Phase 2: Initial item purification

The main objective of the item purification or reduction step was to review and refine the generated items to enhance the content and face validity of the scale. Guided by the above objectives, an expert panel review was conducted and administered through e-mail which comprised of all the 20 experts who had participated in the initial stage of item generation. This review asked the experts to assess the items on three criteria a) the relevance of each item to the construct b) the need for a change in the wording of the items c) whether an item qualifies to be eliminated for some reason.

This survey took almost 25 days to be completed and for all the experts to reply back. 3 items were deleted because the experts found them to be similar and repetitive to some already existing items. For example, *"I feel I don't perform well in group activities"* was deleted and replaced with *"I feel I may be rejected as a useful member of the team/group"*. Similarly, *"I am not able to do justice to my role as a family man" and "I feel anxious while carrying out my duty"* were deleted

and replaced with *"I am able to look after the needs of my family"* and *"I experience performance anxiety in my regular professional tasks.* The scale was constituted on a Likert scale format with ratings from 0 (Does not apply to me at all), 1(Applies to me to some degree or some of the time), 2 (Applies to me to a considerable degree or a good part of the time) and 3 (Applies to me very much or most of the time). Out of the 37 items, 23 were positive (items 3, 9, 11, 14, 15, 17, 18, 20, 22-32, 34-37) and 14 were negative items (1, 2, 4-8, 10, 12, 13, 16, 19, 21, 33). Positive items were reverse scored. Following table (Table 4.1) provides final set of items (37 items) retained for further analysis.

Table 4.1

Scale items subjected to EFA

Item No.	**Scale Items**
1	I feel I may be rejected as a useful member of the team/group
2	I stay away from my family and relatives for long durations of time
3	I am able to look after the needs of my family
4	I experience performance anxiety in my regular professional tasks
5	I feel anxious about the consequences for not performing the task properly
6	I feel 24x7 duty hours lead to little or no personal time
7	Short career span due to early retirement concerns me
8	I feel I have less social status in comparison to other uniformed services
9	My efforts and sacrifices are recognized and appreciated by the society
10	I feel I am over qualified for my job
11	I get adequate time for completing the tasks assigned to me
12	There are no assured avenues for post-retirement engagement for me
13	I am concerned about financial insecurities after retirement
14	My efforts are recognized and appreciated by the higher authorities

15	I feel I can share personal problems with colleagues
16	It concerns me that officers with equal qualifications are occupying much higher status
17	I have enough facilities and privacy for a comfortable living
18	I feel I get my promotion when it is due
19	I feel apprehensive about malfunctioning of weapons during critical situations
20	I feel my personal ambitions are being fulfilled in the army
21	I feel that my personal strengths/skills are not being utilized properly in my place of work
22	My organization takes enough care in matters of food, rest, accommodation and family welfare
23	I feel there is adequate compensation and rehabilitation provided after injuries
24	I have been adequately trained for extra duties like disaster relief etc
25	I get adequate personal safety equipment wherever needed
26	I get adequate infrastructural and logistical support for medical emergencies in operational areas
27	I feel there is a proper mechanism for soldier grievances in the organization
28	I feel there is transparency in the functioning of the administration
29	There is adequate trust and bonding between me and my seniors
30	I feel certain about getting leave during personal or family emergencies
31	I feel I can express my views freely in front of authorities
32	I get technically advanced weapons to meet challenging situations
33	I find the routine professional tasks repetitive and unfulfilling
34	Proper training has been given to me for the tasks assigned to me
35	I get adequate guidance and support for task completion by my senior
36	I am satisfied with the working environment
37	I feel I am treated with dignity as a sahayak (Help or Aide)

4.5 Phase 3: Exploratory Factor Analysis (EFA)

4.5.1 *Background*

The most important purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood (Yong & Pearce, 2013). In simple terms, factor analysis regroups variables into a limited set of clusters based on their shared variance. Hence, it helps to isolate constructs and concepts.

EFA allows the investigator to explore the most prominent variables to create a theory, or model from a large set of latent dimensions that are often represented by a set of items (Pett, Lackey, & Sullivan, 2003; Swisher, Beckstead, & Bebeau, 2004; Thompson, 2007; Henson & Roberts, 2006). EFA is essentially suitable for development of scales and is applied when there is little theoretical basis for specifying in advance the number and patterns of common factors (Hurley et al.,1997 ; Hayton, Allen, & Scarpello, 2004).

The objectives of Exploratory Factor Analysis (Pett, Lackey, & Sullivan, 2003; Thompson, 2007) are: reduction of the number of factors (variables), an assessment of the multi-collinearity among factors which are correlated, uni-dimensionality of constructs' detection and their evaluation, evaluating the validity of the construct in a survey, examination of factors (variables) relationship or structure, development of theoretical constructs and in proving proposed theories.

Correlation Matrix: In EFA, a correlation matrix as one of the most widely applied statistical technique (Henson & Roberts, 2006). It is used to determine the relationships between variables. Tabachnick & Fidell (2001) recommended selecting the correlation matrix for correlation coefficients over 0.30. A loading of 0.3, indicates that the factors account for approximately 30%

relationship within the data. In other words it would indicate that a third of the variables share too much variance, and hence it becomes impractical and difficult to determine if the variables are correlated with each other or the dependent variable (multicollinearity) (Williams, Onsman, & Brown, 2010). Hair et al. (1995a) categorized the correlation loadings in the following way: 0.30 = minimal, 0.40 = important, and 0.50 = practical. If the correlation is less than 0.30, then it should be reconsidered (Tabachnick & Fidell, 2001). If the correlation matrix is an identity matrix which signifies that there is no relationship among the items then EFA should not be applied (Kaiser, 1958).

Kaiser- Meyer-Olkin (KMO): Before the extraction of the constructs, there is a test which is conducted to examine the adequacy of the sample and the suitability of data for conducting EFA (Laura & Mazerolle, 2011). The sampling adequacy can be assessed by examining the Kaiser-Meyer-Olkin value (KMO) (Kaiser, 1970). KMO value is used when the cases to variable ratio is less than 1:5. It ranges from 0 to 1. According to Hair et al. (1995a) and Tabachnick & Fidell (2001), value of 0.50 is considered appropriate for EFA. Contrary to this Netemeyer, Bearden & Sharma (2003) stated that a KMO correlation above 0.60 - 0.70 is considered adequate for analyzing the EFA output. The KMO value indicates sample adequacy. If the value comes in the acceptable range then the researchers can move forward with the next step of analysis (Netemeyer, Bearden & Sharma, 2003).

Factor Extraction: There are several ways to extract factors like principal components analysis (PCA), principal axis factoring (PAF), image factoring, maximum likelihood, alpha factoring,

unweighted least squares, generalized least squares and canonical (Tabachnick & Fidell, 2001; Thompson, 2007; Costello & Osborne, 2005). Principal components analysis and principal axis factoring are the methods that are most commonly used in research (Tabachnick & Fidell, 2001; Thompson, 2004; Henson & Roberts, 2006). Thompson (2007) stated that the reason why PCA is mostly used is because it is set as the default method in many statistical software. It is fundamentally used when there is no prior theoretical basis for the model under question (Gorsuch, 1990).

Factor Retention Methods: After the extraction phase is over, the researcher must decide how many constructs should be retained for rotation. Hayton, Allen & Scarpello (2004) state why this decision is important. The utility of exploratory factor analysis depends on being able to differentiate major factors from minor ones (Fabrigar et al.,1999). There is empirical evidence that both under extraction and over extraction are substantial errors that affect results, although specifying too few is traditionally considered more severe. (Velicer, Eaton & Fava, 2000 ; Hayton, Allen & Scarpello, 2004). This also affects EFA efficiency and meaning (Ledesma & Valero-Mora, 2007).

A number of methods are available to assist the researcher in making this decision, but they do not always lead to the same or even similar results (Zwick & Velicer, 1986; Thompson & Daniel, 1996). Most widely used factor retention methods are; Cumulative percent of variance extracted, Kaiser's criteria (eigenvalue > 1 rule) (Kaiser, 1960), Scree test (Cattell, 1966) and Parallel Analysis (Horn, 1965). Hair et al (1995a) state that in a majority of cases multiple criteria are used.

According to Hair et al (1995a) in cumulative percentage of variance, factors should be retained when at least 95% of the variance is explained. Although in the humanities and social sciences, the explained variance in most cases is generally as low as 50-60% (Hair et al., 1995a; Pett, Lackey & Sullivan, 2003).

According to the K1 - Kaiser's method, only constructs which have the eigenvalues greater than one should be retained for interpretation (Kaiser, 1960). This approach is the best known and most widely used (Fabrigar et al., 1999). Another popular method used in this regard is the Cattell's Scree test which involves the visual exploration of a graphical representation of the eigenvalues for breaks or discontinuities (Cattell, 1966). The number of data points above the break (which does not include the point at which the break occurs) decides the number of factors to be retained. The break point divides the important or major factors from the minor or trivial factors (Ledesma & Valero-Mora, 2007). Interpreting Scree plots is very subjective. Therefore, the number of factors to be retained and subsequent results can be different for different researchers (Zwick & Velicer, 1986; Pett et al.,2003). This disagreement and subjectivity can be reduced if the sample size is large, N:p ratios are (>3:1) and communalities values are high (Linn, 1968; Gorsuch, 1983; Lackey, & Sullivan, 2003). A comparison between Scree test and K1 rule concluded that the Scree test performed better (Zwick & Velicer, 1986), although it was still correct only 57% of the times. In most cases the problem of overestimate of factors was found (Ledesma & Valero-Mora, 2007). Still according to Costello & Osborne (2005) scree test is the best choice for researchers.

Selection of Rotation Method: Rotation methods help to produce an interpretable and simplified solution by maximizing high item loadings and minimizing low item loadings. Oblique and orthogonal rotations are two types of rotation techniques which are widely used. Oblique rotation

is more accurate where the data does not meet priori assumptions (Costello & Osborne, 2005). This method produces the construct structures that are correlated. Quartimin, direct oblimin and promax are commonly available methods where oblique rotation is concerned. In contrast, orthogonal rotation produces factors that are uncorrelated. Orthogonal method has several options for rotation; quartimax, varimax, and equamax. According to Costello & Osborne (2005) orthogonal rotation produces more easily interpretable results and is slightly simpler than oblique rotation. Varimax rotation which was developed by Thompson (2004) is the most common form of orthogonal rotational method.

The following section describes the details of EFA conducted (method and results) on the 37 items of "Occupational Stress Scale for Soldiers" generated in the phase 2.

4.6 Method

4.6.1 *Data Collection and Procedure*

The survey questionnaires with 37 items pertaining to possible occupational stressors were sent to the senior officers of the Indian Army for their approval and permission was sought to collect data from the soldiers. This was an all-male sample since there are no female soldiers in the Indian Army. The data was collected from all the commands of the Indian Army namely Northern, Southern, South western, Eastern, Western and Central commands. The survey sessions were organized with the help of officers in the respective units where the participants could gather and complete the survey. The scale was a self-administered survey framed in English. The introductory page consisted of some basic instructions to the participants informing them that they were required to fill up the questionnaire anonymously. This was done to maintain confidentiality

and to evoke honesty in their responses. They were also informed that there were no right or wrong responses or time limit to complete the questionnaire. The demographic information that was collected from the participants included age, educational qualification, rank and years of service in the Army (This information acted as control variables during the analysis). In case of any confusion pertaining to the instructions or the content of the questionnaire clarifications were provided on the spot although such cases were rare. Finally, a sample of 350 completed questionnaires was gathered after this exercise for analysis. All the ethical issues such as confidentiality, anonymity and voluntary participation were maintained during the data collection.

4.6.2 *Participants*

The details of the 350 participants are as follows:

Table 4.2

Age range and frequencies

Age range	Frequencies
Below 20	15
20-25	39
25-30	66
30-35	87
35-40	77
40 and above	66

Table 4.3

Educational Qualifications

Level of Education	Frequencies
Below matric	11
Matric	85
10+2	170
Graduate	78
Post graduate	6

Table 4.4

Years of experience in the Army

Years of Service	Frequencies
1-5	52
5-10	53
10-15	136
15-20	52
20 and above	57

Table 4.5

Ranks

Ranks	Frequencies
Sepoy	106
Naik	81
Havildar	98
Naib Subedar	38
Subedar	27

4.7 Results

4.7.1 *Assumptions testing*

To ensure the appropriateness of the data for EFA, few analyses were conducted. The Kaiser-Meyer-Olkin measure (KMO) indicates whether the sample on which the EFA was carried out was adequate or not. The values range from 0 to 1. The Kaiser-Meyer-Olkin measure of sampling adequacy for the entire data is 0.78 which is considered adequate (Netemeyer, Bearden & Sharma, 2003). A significant result ($p<0.005$) obtained in the Bartlett's Test of Sphericity with a chi-square value of 1010.291, df =180 at p = 0.01 indicates that the matrix is not an identity matrix, that is, the variables do relate enough to one another in a meaningful way for the exploratory factor analysis to be considered successful (Bartlett, 1950). The normality of the data was assessed by evaluating the kurtosis and skewness of each variable. The acceptable value range for skewness and kurtosis in a normally distributed data is between -2 and +2 (George & Mallery, 2010). The skewness and kurtosis values for our data are 1.111 and 0.925 respectively which are acceptable. As far as the factor loadings are concerned, at a significance level of 0.05, factor loadings of +/- 0.35 are considered significant (Farrell & Rudd, 2009), however loadings of +/- 0.70 indicate a well-defined structure and are the aim of any factor analysis (Farrell & Rudd, 2009). The obtained values for our data fell between 0.67 to 0.75, that is within the acceptable limits. The communality estimate is the amount of variance explained for each variable in the factor solution. A rule of thumb is to delete those variables in which the factor structure explains less than 50% (Hair et al., 2006a). There were no deletions at this stage because this rule was satisfactorily met in our case. Eigenvalues greater than 1 were considered acceptable.

4.7.2 *Factor structure*

After applying Principal Component Analysis as the extraction method and Varimax with Kaiser Normalization as the rotation method, four major stress factors came up in our study namely:

(1) *Job related* (13 items)

(2) *Individual/Personal* (10 items)

(3) *Administrative* (8 items) and

(4) *Group/Team* (6 items).

The job related stressors include such stimuli that are inherent in the characteristics of the job itself, which might lead to stress in the soldiers. Individual/personal stressors deal with those factors that are personal or exclusive to the soldier experiencing them due to their own perception about life and job. Administrative stressors are those factors that may potentially cause stress to the soldiers due to the working of the administrative authority in the Army. Finally, the group/team stressors are the factors within the group/team of colleagues that can create stress in the life of the soldier. The cumulative variance for all the four factors is 62.55 % (Table 4.6).

Table 4.6

Factor Extraction using Principal Component Analysis and Varimax rotation

S.No	Items	Factors			
		1	2	3	4
1	I feel I may be rejected as a useful member of the team/group				0.68
2	I stay away from my family and relatives for long durations of time		0.71		
3	I am able to look after the needs of my family		0.69		
4	I experience performance anxiety in my regular professional tasks		0.69		
5	I feel anxious about the consequences for not performing the task properly		-0.71		
6	I feel 24x7 duty hours lead to little or no personal time	0.67			
7	Short career span due to early retirement concerns me	-0.72			
8	I feel I have less social status in comparison to other uniformed services	0.71			
9	My efforts and sacrifices are recognized and appreciated by the society		0.72		
10	I feel I am over qualified for my job	0.71			
11	I get adequate time for completing the tasks assigned to me	0.73			
12	There are no assured avenues for post-retirement engagement for me	0.71			
13	I am concerned about financial insecurities after retirement	0.72			
14	My efforts are recognized and appreciated by the higher authorities				-0.69
15	I feel I can share personal problems with colleagues				0.72
16	It concerns me that officers with equal qualifications are occupying much higher status	0.74			
17	I have enough facilities and privacy for a comfortable living		0.69		
18	I feel I get my promotion when it is due	0.71			

19	I feel apprehensive about malfunctioning of weapons during critical situations		-0.71		
20	I feel my personal ambitions are being fulfilled in the army		0.71		
21	I feel that my personal strengths/skills are not being utilized properly in my place of work	-0.71			
22	My organization takes enough care in matters of food, rest, accommodation and family welfare			-0.74	
23	I feel there is adequate compensation and rehabilitation provided after injuries			-0.72	
24	I have been adequately trained for extra duties like disaster relief etc.	0.67			
25	I get adequate personal safety equipment wherever needed			0.69	
26	I get adequate infrastructural and logistical support for medical emergencies in operational areas			0.68	
27	I feel there is a proper mechanism for soldier grievances in the organization			0.71	
28	I feel there is transparency in the functioning of the administration			0.73	
29	There is adequate trust and bonding between me and my seniors				0.70
30	I feel certain about getting leave during personal or family emergencies			0.72	
31	I feel I can express my views freely in front of authorities				0.69
32	I get technically advanced weapons to meet challenging situations			0.75	
33	I find the routine professional tasks repetitive and unfulfilling	-0.71			
34	Proper training has been given to me for the tasks assigned to me	0.71			
35	I get adequate guidance and support for task completion by my senior				-0.69
36	I am satisfied with the working environment		0.72		
37	I feel I am treated with dignity as a Sahayak (Help or Aide)		0.73		

	Percentage of variance	22.5	15.25	12.80	12
	Cumulative Percentage of variance	22.5	37.75	50.55	62.55
	Name of the factors	*Percentage of variance*		*Cumulative Percentage of variance*	
	Job related	22.5		22.5	
	Individual/Personal	15.25		37.75	
	Administrative	12.80		50.55	
	Group/Team	12.00		62.55	

Note. Factor 1=Job related stressors. Factor 2=Individual/Personal stressors. Factor 3= Administrative stressors. Factor 4= Group stressors

4.8 Phase 4: Confirmatory Factor Analysis (CFA)

4.8.1 *Background*

The purpose of this phase is to confirm the EFA model of the occupational stress of soldiers using confirmatory factor analysis. The purpose of EFA is to identify the factor structure or model for a set of variables. Hence it is considered as more of a theory-testing procedure (Stevens, 2012). On the other hand, Confirmatory Factor Analysis (CFA) is a means to validate the results obtained from EFA and to test their replicability (Hair, Ringle, & Sarstedt, 2012). CFA is considered as the most rigorous methodological approach for testing the validity of factorial structures (Byrne, 2001).

In EFA, the factors are derived from statistical results. The statistical method determines the number of factors and loadings (Hair, Ringle, & Sarstedt, 2012). On the other hand, in CFA, the

number of factors and variables making up those factors are specified before carrying out the analysis. Thus, the role of CFA statistics is to suggest how well the specification of the factors matches reality (actual data) (Hair, Ringle, & Sarstedt, 2012). CFA is commonly used for establishing the validity of a single factor model, test the significance of a specific factor loading, test whether a set of factors are correlated or uncorrelated and assess the convergent and discriminant validity of a set of measures (DeCoster et al., 1998). In CFA, several statistical tests are used to determine how well the model fits to the data (Suhr, 2006). A "good model fit" indicates that the model is plausible (Schermelleh-Engel, Moosbrugger, & Müller, 2003).

The first step in conducting CFA is to develop a hypothesized measurement model using the factor structure that was obtained after conducting EFA to test its validity (Byrne, 2001). Once the measurement model was developed, the estimations were carried out using the Maximum Likelihood Method. It is the most common estimation procedure and is very dependable when there are violations of non-normality of the data (Hair, Ringle, & Sarstedt, 2012). As suggested in the literature, three key sets of parameters were estimated and reported while conducting CFA (Furr, 2011), these were: fit Indices, parameter estimates, and modification indices. Each of these parameters are discussed below:

4.8.2 *Fit Indices*

Following fit indices are commonly reported in CFA.

Chi-square/df (CMIN/df): The chi-squared test indicates the difference between the observed and expected covariance matrices. Values closer to zero indicate a better fit. Smaller the difference between expected and observed covariance matrices better is the model fit (Gatignon, 2010).

GFI (Goodness of Fit Index): The goodness of fit index (GFI) is a measure of fit between the hypothesized model and the observed covariance matrix (Baumgartner & Hombur, 1996). Values generally range from 0 to 1. A value of 0.9 and above is desirable for a good fit (Tuncer & Kaysi, 2013).

SRMR (Standardized Root Mean Square Residual): It is defined as the square root of the discrepancy between the sample covariance matrix and the model covariance matrix (Hooper, Coughlan & Mullen, 2008). The estimation values range from 0 to 1, with a value of 0.08 or less being indicative of an acceptable model (Hu, Bentler & Peter, 1999).

RMSEA (Root Mean Square Error of Approximation): RMSEA analyzes the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. It is able to avoid issues of sample size in fit estimation (Hooper, Coughlan & Mullen, 2008). The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. A value of .06 or less is indicative of acceptable model fit (Brown, 2015).

CFI (Comparative Fit Index): The comparative fit index analyzes the model fit by examining the discrepancy between the data and the hypothesized model. It adjusts for the issues of sample size inherent in the chi-squared test of model fit (Gatignon, 2010). A CFI value of 0.95 or higher is presently accepted as an indicator of good fit (Hu & Bentler,1999).

NFI (Normed Fit Index): It takes values between 0 and 1. Higher values show better fit. Values greater than 0.90 are acceptable, while values greater than 0.95 are good fit. It is in the group of the fit indices based on independent model (Rahim, Civelek, & Liang, 2018).

Pclose: The value should be greater than 0.05 (Hu & Bentler, 1999).

The assessment of fit indices can provide the researcher with two choices: if they suggest that the model is fit and adequate, then the parameter estimates can be examined to evaluate the psychometric qualities of the model. On the other hand if they indicate that the model is unfit and inadequate, then the modification indices have to be examined so that revisions can be made to the model (Furr, 2011).

4.8.3 *Parameter estimates*

The parameter estimates are examined when the hypothesized model is deemed fit by fit indices. In AMOS software, factor loadings are termed as Standardized Regression Weights. They range between -1 to + 1. These loadings are examined to check if there are any loadings lower than 0.50. The standardized factor loading of all the items ranges should be above the threshold limit of 0.60 and ideally, 0.7 or higher above was suggested by Chin, Gopal & Salisbury (1997) and Hair, Ringle, & Sarstedt (2012). If not, then those variables are considered as candidates for deletion. However, other results (for example, associated standardized residual value and squared multiple correlations) should also be considered before taking a decision to remove any variable.

4.8.4 *Modification Indices (MI)*

If the values of fit indices indicate an inadequate and poor fit, then modification indices are examined to identify possible revisions that can be made to the hypothesized measurement model to improve its model fit. The size of a modification index is examined to decide whether any changes can or should be made (Furr, 2011). Large MI values for variable(s) indicate that removing those particular variables will improve the model fit. It is common to delete such items from further

analysis (Hair, Ringle, & Sarstedt, 2012). Any decision to remove a variable should be taken after considering other aspects like standardized regression weights and standardized residual values. In addition to this, deletions should be made in consultation with theory.

4.8.5 *Model Re-specification*

If any changes are made to the measurement model, (for example, deletion of an item) then the next step is to re-specify the measurement model. This means running the analysis again and re-estimating the model fit and other parameters to see whether the model is able to achieve an acceptable model fit now. A model fit is acceptable when the values of various fit indices are within the acceptable levels (benchmark values). Decisions regarding model re-specification are based on three main criteria: standardized regression weights (or estimated loadings), standardized residuals, and modification indices (Hair, Ringle, & Sarstedt, 2012).

4.8.6 *Scale Validity using Convergent and Discriminant Validity*

Convergent validity (or Average Variance Extracted) refers to the degree to which two measures of constructs that theoretically should be related, are in fact related (Trochim, 2006). Convergent validity can be established if two similar constructs correspond with one another, while discriminant validity applies to two dissimilar constructs that are easily differentiated. Campbell and Fiske (1959) stress the importance of using both discriminant and convergent validation techniques when assessing new tests. In other words, in order to establish construct validity, one has to demonstrate both convergence and discrimination. A successful evaluation of convergent validity shows that a test of a concept is highly correlated with other tests designed to measure

theoretically similar concepts (Trochim, 2006). Discriminant validity (or Maximum Shared Variance) tests whether concepts or measurements that are not supposed to be related are actually unrelated. A successful evaluation of discriminant validity shows that a test of a concept is not highly correlated with other tests designed to measure theoretically different concepts (Campbell & Fiske, 1959). The AVE value should be 0.5 or above and the MSV value should be less than the convergent validity value, that is, MSV<AVE (Hair, Ringle, & Sarstedt, 2012).

If there are convergent validity issues in the test, then the variables do not correlate well with each other as far as the parent factor is concerned. This means that the latent factor is not well explained by the observed variables. On the other hand, if the test is facing discriminant validity issues then the variables correlate more highly with variables outside the parent factor than with the ones inside the domain of the parent factor. This suggests that the latent factor is better explained by some other variables from a different factor than by its own observed variables (Hair, Ringle, & Sarstedt, 2012).

The following section describes the details of CFA conducted (method and results) on the four factor structure generated in the EFA of phase 3.

4.9 Method

4.9.1 *Participants*

A similar data collection procedure (as described in Phase 3) was used for this phase of the study also. A sample of 350 participants provided data in this phase. The demographic details of the 350 participants are as follows:

Table 4.7

Age range and frequencies

Age range	Frequencies
Below 20	9
20-25	55
25-30	54
30-35	87
35-40	81
40 and above	64

Table 4.8

Educational Qualifications

Level of Education	Frequencies
Below matric (10^{th} Standard)	17
Matric	66
10+2	178
Graduate	79
Post graduate	10

Table 4.9

Years of experience in the Army

Years of Service	Frequencies
1-5	58
5-10	55
10-15	118
15-20	64
20 and above	55

Table 4.10

Ranks

Ranks	Frequencies
Sepoy	115
Naik	77
Havildar	92
Naib Subedar	40
Subedar	26

4.10 Results

The 37 item scale that emerged out of EFA was tested for validity using CFA. Seven goodness of fit indices were used namely: Chi-square/df, GFI,CFI, NFI, SRMR, RMSEA and P close. Most of

the indices (5 out of 7) were found to have acceptable values. The model looks promising and accurate but there is still some scope of improvement as far as the model fit is concerned. Since most of the model fit indices have acceptable values, there was no requirement of analyzing standard residual covariance which delete items with significant values to increase the model fit.

Table 4.11

Model fit measures after CFA of Occupational Stress Scale for Soldiers

Fit Indices	Threshold	Obtained Values
CMIN/df	<3good; <5 sometimes Permissible	2.68
GFI	>0.95	0.97
CFI	>0.95;>0.90 traditional; >0.80 sometimes permissible	0.70
NFI	>0.95 good; >0.90 acceptable	0.57
SRMR	<0.09	0.06
RMSEA	<0.05 good; 0.05-0.10 moderate; > 0.10 bad	0.048
Pclose	>0.05	0.068

Note. CMIN/df = chi-square/degrees of freedom. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation.

4.11 Validity Testing

The next step was to assess the convergent validity of the model by assessing its factor loadings, variance extracted, and reliability. Convergent validity is referred to as the extent of shared variance among the set of indicators for a construct. Convergent validity exists when the indicators are highly correlated with each other (Netemeyer, Bearden & Sharma, 2003). For convergent validity the following criteria need to be satisfied: 1) Ideally all variables should have factor loadings greater than 0.7, 2) average variance extracted should exceed 0.5, and 3) reliability should exceed 0.7 (Farrell, 2009).

First, as Table 4.12 indicates, the factor loadings of the four dimensions of the scale ranged from 0.67 to 0.75. The lower range of 0.67 is almost close to the acceptable value of 0.70.

Table 4.12

Factor loadings range of dimensions of the Occupational Stress Scale for Soldiers

Dimensions	**Factor loadings**
Job related	0.70 - 0. 75
Individual/Personal	0.70– 0.73
Administrative	0.70 – 0.71
Group/Team	0.70 – 0.74
Total scale	0.70– 0.75

Second, average variance extracted (AVE) was 0.52. AVE is the average of the sum of the squared factor loadings and indicates the amount of shared variance between the measures when compared

to the error (Fornell & Larcker, 1981; Netemeyer, Bearden & Sharma, 2003). The AVE of 0.52 suggests there is more shared variance than error for the variables which is above the reasonable threshold of 0.50 when it comes to newly developed scales (Netemeyer, Bearden & Sharma, 2003).

Finally, two internal reliability measures are commonly used to assess convergent validity, 1) Cronbach's coefficient alpha which assesses the degree of inter-item correlations, and 2) composite reliability which assesses the variance extracted as compared to the error value in the model. The generally agreed upon lower limit for Cronbach's alpha is 0.70. The general rule followed for inter-item correlations is that they should exceed 0.30 (Hair, Ringle, & Sarstedt, 2012). Coefficient alpha for this scale is 0.74 with total item correlations ranging from 0.55 to 0.67. The dimension wise values of Cronbach alpha range from 0.70 to 0.77 (Table 4.13). The composite reliability measure is computed from the squared sum of factor loadings and the sum of the error variance. Like Cronbach's alpha, the ideal estimate value is 0.7 or greater to provide sufficient evidence of convergent validity. The composite reliability estimate is 0.76 for these scale items with the dimension wise values ranging from 0.71 to 0.83 (Table 4.14).

Table 4.13

Cronbach alpha values of Occupational Stress Scale for Soldiers

Cronbach Alpha Values	**Obtained Values**	
0.8 > α ≥ 0.7 Acceptable; 0. 9 > α ≥ 0.8Good; α ≥ 0.9 Excellent	Total Scale	0.74
	Types of Stressors	
	Job related	0.70
	Individual/Personal	0.71
	Administrative	0.77
	Group/Team	0.76

Table 4.14

Composite reliability values of Occupational Stress Scale for Soldiers

Composite Reliability	**Obtained Values**	
Acceptable Value>0.7	Total Scale	0.76
	Types of Stressors	
	Job related	0.83
	Individual/ Personal	0.75
	Administrative	0.72
	Group/Team	0.71

The final step was to assess the discriminant validity of the scale which is represented as the Maximum Shared Variance (MSV). Discriminant validity is demonstrated by evidence that measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be highly correlated to each other (Hubley, 2014). Two criteria need to be fulfilled to establish the discriminant validity of the scale which are: 1. MSV<AVE 2. Square root of AVE should be greater than inter-construct correlations (Hair et al.,2010). The MSV value of our scale is 0.33 which is less than the AVE value of 0.52. The inter-construct correlations range between 0.36 to 0.49 which are less than the square root of AVE, that is, 0.72. Both the criteria were met as far as our data is concerned.

Conclusion

This chapter discussed the preliminary development and validation process of a new scale titled "*Occupational Stress Scale for Soldiers".* Most of the psychometric properties were found to be acceptable. EFA revealed four dimensions of the scale namely job related stressors, individual/personal stressors, administrative stressors and group/team stressors. To further validate these results, confirmatory factor analysis was carried out on a second sample of participants where most of the fit parameters were satisfactorily achieved along with various reliability and validity measures. Therefore, this scale was used in conjunction with other standardized scales in study 2 (chapter 5) to test the proposed theoretical model of soldiers' well-being.

Chapter 5

Study 2: Test of Proposed Theoretical Models for Soldier's Well-Being

5.1 Introduction

The objective of the second study was to test a proposed theoretical models (discussed in detail in chapter 3) to understand the effects of potential risk and protective factors on the subjective and psychological well-being of the soldiers. In order to explore this objective, three separate path models were proposed (two direct path models and one moderated path model) and tested. Two direct path models include a risk factors model and a protective factors model. In the moderated path model, some protective factors were proposed as the moderators between the risk factors and well-being variables. The details of the models are shown below (Figure 5.1).

Risk Factors Model: This model proposes to identify the potential risk factors to a soldier's well-being. The variables of social isolation, occupational stress and death anxiety were were identified as the risk factors and included as the independent variables. The effect of these on the subjective and psychological well-being of the soldiers will be studied making them the dependent variables in this study.

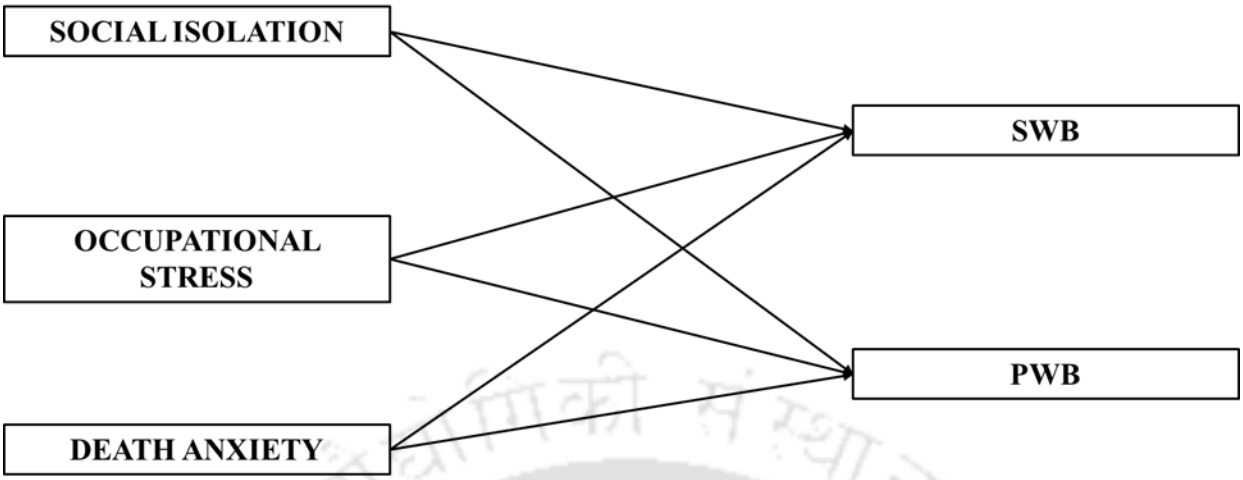

Fig 5.1. Risk factors model

Protective Factors Model: This model proposes to identify the potential protective factors to a soldier's well-being. The variables of personality, resilience, leadership and group cohesion were identified as the protective factors and included as the independent variables. The effect of these on the subjective and psychological well-being of the soldiers will be studied making them the dependent variables in this study.

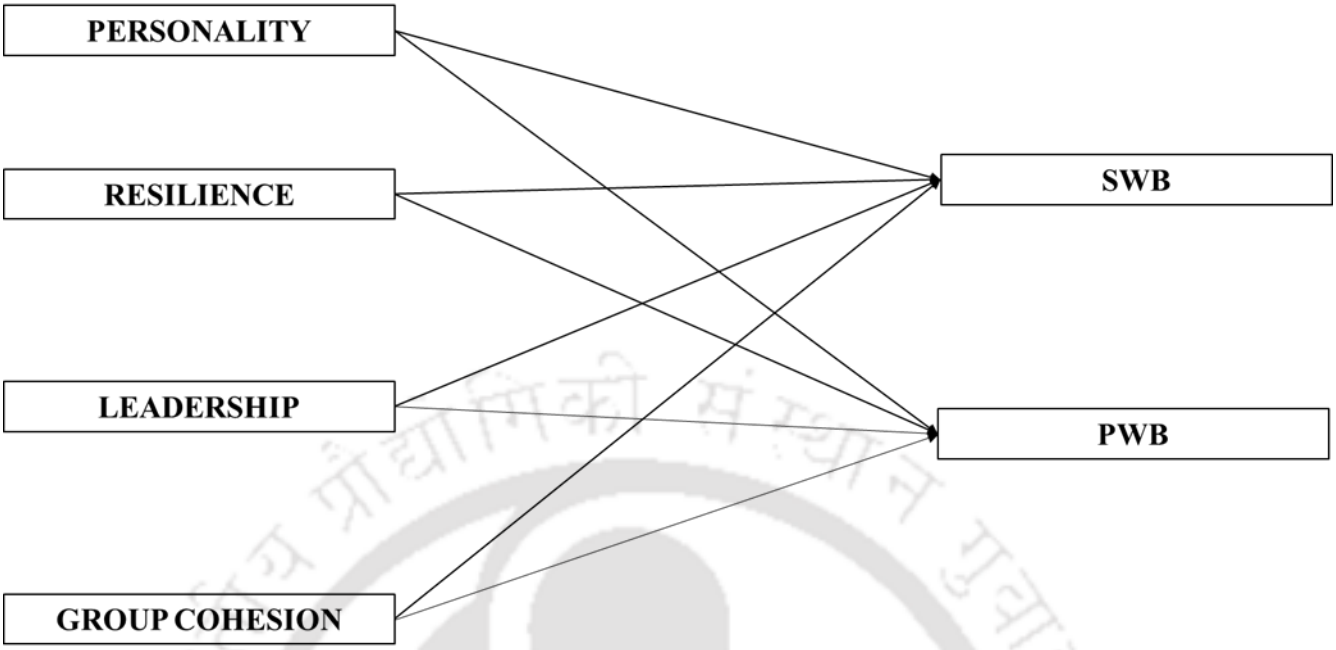

Fig 5.2. Protective factors model

Moderator Factors Model: This model aims to understand whether the protective factors of resilience, leadership and group cohesion play a moderating role when it comes to the relationship between the risk factors (social isolation, occupational stress and death anxiety) and subjective and psychological well-being. The risk and protective factor models will give an insight into the direct relationships between the independent and dependent variables, while this model will explain the interactions between all the variables and the impact that they have on the subjective and psychological well-being of soldiers. This model will provide insights into the complex interactions among these variables.

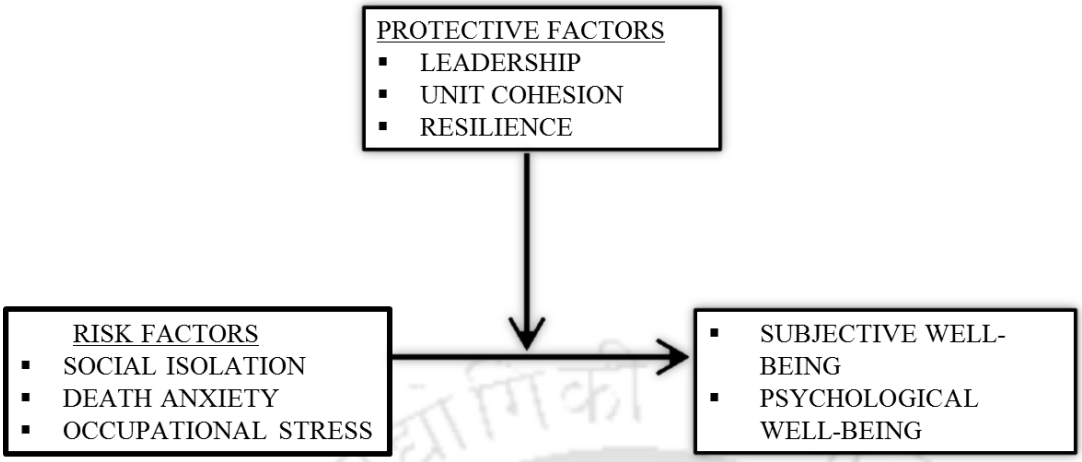

Fig 5.3. Moderator factors model

Based on these models, following research questions and hypotheses are proposed.

5.2 Research Questions

(1) Do occupational stress, social isolation and death anxiety act as risk factors in the context of an Indian soldier's Subjective and Psychological well-being?

(2) Do factors like personality, leadership, unit cohesion and resilience act as protective factors in the context of an Indian soldier's Subjective and Psychological well-being?

(3) In what ways do some protective factors (leadership, unit cohesion and resilience) mitigate the effects of the risk factors (social isolation, occupational stress and death anxiety) on the Subjective and Psychological well-being of an Indian soldier?

Following specific hypotheses were derived from the above research questions-

5.3 Hypotheses

In the context of Indian Army soldiers, following hypotheses are proposed-

H1: Social isolation will negatively impact both SWB and PWB.

H2: Occupational stress will negatively impact both SWB and PWB.

H3: Death anxiety will negatively impact both SWB and PWB.

H4: Personality traits will impact both SWB and PWB.

H5: Resilience will positively impact both SWB and PWB.

H6: The quality of leader-follower relationship will positively impact both SWB and PWB.

H7: Group cohesion will impact both SWB and PWB.

H8: Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H9: The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

H10: Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

5.4 Method

5.4.1 *Data collection & Procedure*

A sample of 750 participants from all the commands of the Indian Army namely Northern, Southern, South western, Eastern, Western and Central commands participated in this study. It was an all male sample because there are no serving female soldiers in the Indian Army. The demographic information that was collected from the participants included age, educational qualification, rank and years of service in the profession. Out of this total sample, 50 questionnaires were rejected because of incomplete responses. The final sample of 700 was used for testing the proposed theoretical models. The survey questionnaires consisted of the Occupational Stress Scale for soldiers (developed and validated in study 1) along with 8 other standardized scales measuring the remaining variables of the study. This set of questionnaires was sent to the senior officers of the Indian Army for their approval to collect data from the soldiers. The data collection sessions were organized with the help of officers in the respective units where the participants could gather and complete the survey. The scales were self-administered scales in English. The introductory page consisted of some basic instructions to the participants informing them that they were required to fill up the questionnaires anonymously. This was done to maintain confidentiality and to evoke honesty in their responses. They were also informed that there were no right or wrong responses or time limit to complete the questionnaire. In case of any confusion pertaining to the instructions or the content of the questionnaires clarifications were provided on the spot. The Doctoral Review Committee of our Institution approved ethical issues related to the study. All the ethical issues such as voluntary participation, confidentiality of data and informed consent were ensured to the participants before data collection.

5.4.2 *Participants*

The details of the 700 participants are as follows:

Table 5.1

Age range and frequencies

Age Range	Frequencies
Below 20	10
20-25	236
25-30	68
30-35	77
35-40	288
40 and above	21

Table 5.2

Educational Qualifications

Level of Education	Frequencies
Below matric	45
Matric	111
10+2	277
Graduate	201
Post graduate	66

Table 5.3

Years of experience in the Army

Years of Service	Frequencies
1-5	152
5-10	178
10-15	159
15-20	150
20 and above	61

Table 5.4

Ranks

Ranks	Frequencies
Sepoy	117
Naik	211
Havildar	188
Naib Subedar	78
Subedar	106

5.4.3 *Measures Used for Data Collection*

The measures described here are already validated and standardized scales that are being widely used in research all over the world. The only exception to this is the *Occupational Stress Scale for soldiers* that has been developed and validated as part of this thesis (Study 1). The items of all these standardized questionnaires were pre-tested for the appropriateness and relevance before administering to the sample.

UCLA Loneliness Scale (Version 3): Most research on loneliness has been based on the UCLA Loneliness Scale developed by Russell, Peplau and Ferguson in 1978 (Shaver & Brennan, 1991). The initial version of the scale consisted of 20 statements that reflected how an individual described his or her experience of loneliness (Russell, 1982). Even though the scale in itself was found to be reliable and valid initially but the fact that all the items were worded in a negative way gave scope to the possibility of systematic bias in responding. Also there were concerns about the discriminant validity of the scale since there were high correlations (0.40 to 0.50) between loneliness and other related constructs like self-esteem and depression (Russell, 1996). Due to these problem areas, a new version of the scale was introduced in 1980 by Russell and colleagues. This scale included 10 items each of positive and negative worded statements. The scale also measured in terms of discriminant validity against constructs of depression, personality and social desirability (Russell, 1996). In 1996 UCLA Loneliness scale (version 3) was introduced by Russell. In this scale response format as well as the language of the scale were simplified. This version had 11 negatively worded (lonely) and 9 positively (non-lonely) items. In order to make the scale more effective for personal and telephone interviews, the statement, "How often do you feel" was added to the beginning of every item (Russell, 1996). The scale was standardized on populations of college students, nurses, teachers and the elderly (Russell, 1996). The scale is a 4 point Likert scale with 1 (Never), 2 (Rarely), 3 (Sometimes) and 4 (Often). 9 positively worded items are reverse scored. A total score is then calculated to get a measure of loneliness. The scale has a Cronbach alpha and test retest reliability of 0.89 and 0.72 respectively. Construct validity was supported by significant relations with measures of the adequacy of the individual's interpersonal relationships, and by correlations between loneliness and measures of health and well-being (Russell, 1996).

Death Anxiety Scale: The Death Anxiety Scale (DAS), developed by Templer (1970) nearly 50 years ago remains the most popular measure of death attitudes in the literature till date. As the name suggests, the scale measures the existential concerns related to mortality. The scale consists of 15 statements in all, such as "I am very much afraid to die," "I fear dying a painful death," and "The sight of a dead body is horrifying to me." The true/false format is the original response option in the scale. However, a few researchers have also used the DAS with a five-point Likert-type format with 1 (strongly disagree) to 5 (strongly agree) though for the purpose of my study I have used the original format of the scale. The responses marked "False" get a score of 0 while the ones marked "True" get a score of 1. A composite score is obtained to reveal an individual's level of death anxiety. The scale has a Cronbach alpha value of 0.84 and composite reliability value of 0.85. The content, construct and discriminant validity of the scale were satisfactorily established (Soulemani et al., 2017).

Ten Item Personality Inventory: The Big-Five personality model has been the most empirically validated and used personality framework all over the world in the field of psychology (Cepic et al., 2015). It puts forward a hierarchical model of personality traits of five much broader dimensions namely: extraversion, neuroticism, agreeableness, conscientiousness and openness to experience. This theoretical framework is mostly descriptive and emphasizes internal taxonomy (MacDonald, Bore, & Munro, 2008). These descriptors are adequately reflected through the language and behaviour, so the structure of personality traits is placed in the structure of everyday language (Gracanin, Kardum & Krapic, 2004) and trait measurements are grounded in information about behavior (Vorkapic, 2016). With the aim of measuring the Big-Five dimensions, several measures have been developed like Costa and McCrae's (1992) NEO Personality Inventory and

its revised version (NEO-PI- R), which has 240 items and the NEO Five-Factor Inventory (NEO-FFI), which consists of 60 items. The Big-Five Inventory has been developed which contains 44 items (Benet- Martinez & John, 1998; John & Srivastava, 1999). A possibility to measure psychological constructs with short instruments presents the advantage to researchers who have a limited assessment time, but also for those who need to confirm or disconfirm theoretical models (Gardini, Cloninger, & Venneri, 2009). There are various other benefits for designing short measures such as these brief instruments could be applied in longitudinal studies, large-scale surveys, clinical research, pre-screening packets and experience-sampling studies (Robins, Hendin & Trzesniewski, 2001). In the field of personality psychology, three brief instruments have been developed: Big-Five Inventory-10 (Rammstedt & John, 2007); Ten-Item Personality Inventory (TIPI) & Five-Item Personality Inventory (FIPI) (Gosling, Rentfrow & Swann, 2003). Out of these TIPI presented a better solution for measuring personality in a limited assessment time (Vorkapic, 2016). The main contributions of using TIPI in personality research are: a) it is the best solution in studies where brevity of the assessment scale is a very high priority (Saucier, 1994); b) its use provides an accumulation of research findings (Gosling, Rentfrow & Swann, 2003); and c) its item non-redundancy reduces boredom, frustration and demotivation of participants in personality studies (Burisch, 1984). The ten items of the scale are in a Likert scale format measuring extraversion, agreeableness, conscientiousness, emotional stability and openness to experience. For the positive items the scoring ranges from 1 to 7 starting from disagree strongly, disagree moderately, disagree a little, neither agree or disagree, agree a little, agree moderately and agree strongly. For the negative items the scoring and the categories of response are reversed. Dimension wise average score is then calculated for all the five dimensions. The test shows low internal consistency (0.462) because of only two items per factor (Costa et al; 2015). But despite the weak

consistency the test is considered a valid and useful tool for investigations where time is limited. It is based on the Big five factors of personality (Denissen, Geenen, Selfhout, &VanAken, 2008; Garaigordobil & Bernaras, 2009; Kenny, 2004; Muck, Hell, & Gosling, 2007; Rammstedt & John, 2007; Smits & Boeck, 2006; Woods & Hampson, 2005) which has been proven across various translations and validations.

Brief Resilience Scale (BRS): During the past decade, resilience has increasingly become an area of interest in the behavioral and medical sciences (Charney, 2004; Masten, 2001). "Resilience" has been defined in a number of ways, including the ability to bounce back or recover from stress, to adapt to stressful circumstances, to not become ill despite significant adversity, and to function above the norm in spite of stress or adversity (Carver, 1998; Tusaie & Dyer, 2004). The scales that have been developed to assess "resilience" have not focused on these qualities but on the factors and resources that make them possible (Ahern, Kiehl, Sole, & Byers, 2006). Ahern et al. (2006) have reviewed these that were designed to measure resilience. They focused on six measures, and the range of constructs measured included "protective factors that support resiliency," "successful stress-coping ability," "central protective resources of health adjustment," "resilient coping behavior," and "resilience as a positive personality characteristic that enhances individual adaptation" (p. 110). These measures have generally assessed protective factors or resources that involve personal characteristics and coping styles and not resilience as a specific ability to bounce back, resist illness, adapt to stress or thrive in the face of adversity. For example, the Resilience Scale (Wagnild & Young, 1993) assesses equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness. The Connor Davidson Resilience Scale (Connor & Davidson, 2003) measures characteristics such as self-efficacy, sense of humor, patience, optimism, and faith. The

BRS is the only measure that specifically assesses resilience in its original and most basic meaning: to bounce back or recover from stress (Smith et al.,2008). There are 6 items in the scale in a Likert scale format. The scoring alternates between 1 to 5 and 5 to 1 with each consecutive item. The categories of responses range from strongly disagree, disagree, neutral, agree and strongly agree. The total sum is then divided by the number of questions answered to obtain the resilience score on the scale. The scale has a Cronbach alpha value of 0.83. The scale also shows adequate evidence of convergent, concurrent and predictive validity (Kyriazos et al., 2018).

Leader Member Exchange (LMX) 7 Questionnaire: Leader-Member Exchange (LMX) theory states that leaders develop separate relationships with each of their subordinates during a series of work-related exchanges (Graen & Cashman, 1975; Graen & Scandura, 1987). These relationships range from those which are based on exchanges that are directly specified by the employment contract (low LMX relationships) to those where is an exchange of both material and non-material goods and which goes beyond what is required by the employment contract (high LMX relationships) (Liden & Maslyn, 1998). High LMX relationships are characterized by mutual respect, liking, and trust (Dansereau, Graen, & Haga, 1975). The Leader-Member Exchange 7 questionnaire (LMX-7) was developed to measure the quality of working relationships between leaders and followers (Graen & Uhl-Bien, 1995). This is a 7-item instrument where individuals self-report the amount of mutual respect, trust, and obligation that is exchanged in their superior–subordinate relationships. The scale is used to examine how the quality of superior–subordinate relationships affects individual, interpersonal, and organization factors like job satisfaction, communication motives, and organizational identification. Although the LMX-7 remains one of the most prominent and widely used psychometric measures of LMX, there is still a debate whether

the construct should be considered unidimensional or multidimensional (Hanasono, 2017). The scale has a Cronbach alpha value of 0.87 and high concurrent and criterion validity. The total variance reported by the scale is 90.7 percent (Bhal & Ansari, 1996).

Group Climate Questionnaire (GCQ): MacKenzie (1987) developed the Group Climate Questionnaire (GCQ) to assess group climate in group psychotherapy situations. Group climate describes a group over a series of interactions and takes into consideration the cognitions and behaviors of all group members (Crowe & Grenyer, 2008). It refers to the perception of the group's therapeutic environment by the group member (Johnson et al., 2006) and about how he or she feels about the constructive interpersonal investigation process of the group (Johnson, Burlingame, Olsen, Davies, & Gleave, 2005). Engagement, conflict, and avoidance are the most prominent aspects of group climate and the subscales of the GCQ. Engagement is related to group cohesion, caring about the group and its members, self-disclosure, and a cognitive understanding of human behavior. Avoidance is related to avoidance of responsibility for one's own change process in the group, avoiding problems, dependence on the leader, and maintaining interpersonal distance from group members. Conflict is related to interpersonal conflict and a sense of distrust (MacKenzie, 1987). The GCQ is the most frequently used scale in the group psychotherapy field (Bilican & Mceneaney, 2018). Groups are social systems in themselves and group climate measurements completed by group members help to identify developmental stages of the group (MacKenzie & Livesley, 1983). For example, in Stage 1 (Engagement) members tend to have high engagement scores and low avoidance and conflict scores. In Stage 1, the group deals with basic involvement issues and cannot tolerate negative interactions. At the end of Stage 1, avoidance scores increase and engagement scores decrease. There is a focus on individual differences during Stage 2

(Differentiation). Group members experience conflict and anger as they work on establishing their individuality in the group. At Stage 2, engagement scores reduce, and avoidance and conflict scores tend to rise above baseline levels. Stage 3 (Individuation) is marked by a productive state where group members work on personal issues more actively. At Stage 3, engagement scores increase with a decrease in avoidance and conflict scores. Over the three stages, there tends to be an engagement/avoiding/conflict/ engagement pattern as measured by group climate measures (MacKenzie & Livesley, 1983). There are 12 items in the questionnaire in Likert scale format. The rating scale starts with 0 (Not at all), 1 (A little bit), 2 (Somewhat), 3 (Moderately), 4 (Quite a bit), 5 (A great deal) and 6 (Extremely). There are 5 items related to Engagement, 4 to Conflict and 3 to Avoiding. The scores on the items are added and then divided by 5, 4 and 3 respectively to get a dimension wise score. The Dimension wise Cronbach alpha values are 0.78 (Conflict), 0.73 (Engagement), and 0.59 (Avoidance). Construct validity was satisfactorily established using the Multidimensional Relationship Questionnaire (Bilican & Mceneaney, 2018).

Ryff's Psychological Well-being Scale: Much of the research concerning a well-lived life has focused on illness rather than health (Ryff & Singer, 1998, 2008). Only recently have the scholars moved towards studying the models of wellness including both distress and eustress, making it possible to study both the dimensions and having a holistic view (Nelson & Simmons, 2003). Ryff developed an extensive model of well-being that was based on the works of Aristotle, Russel and Rogers (Ryff & Singer, 2008). The model proposes that well-being is related to growth and human fulfilment which have an impact on the person's health (Ryff & Singer, 2008). Ryff proposed a model of psychological well-being in relation to growth and development that suggested there were six core dimensions of the construct namely self-acceptance, positive relations with others,

autonomy, environmental mastery, purpose in life and personal growth. These core dimensions were measured by the Ryff's Psychological Well-being Scale (Henn, Hill & Jorgensen, 2016). The original RPWB questionnaire consisted of 20 items per dimension and includes a total of 120 items. Shortened versions of the RPWB with 84 items (14 items per scale), 54 items (9 per items per scale), 42 items (7 items per scale) and 18 items (3 items per scale) have also been used in research (Abbott et al., 2006). Van Dierendonck (2004) developed an alternative shorter version of the scale consisting 39 items. The short versions were developed because the many validation studies were unable to generate sufficient indisputable support for Ryff's original six factor model (Abbott et al., 2006); additionally shorter versions of the RPWB seemed to increase its structural validity because they complied more easily to confirmatory factor analyses assumptions and reduced model misspecifications. The 42 item scale that has been used in this study is a Likert scale with 22 positive items scored from 1 to 6 with categories ranging from strongly disagree to strongly agree. The scoring is reversed for the 20 negative items, starting from 6 to 1. Dimension wise scores and a total score is then calculated to assess the level of psychological well-being experienced by the individual. For the purpose of this study the total score of psychological well-being will be taken into consideration. The scale has test retest reliability values ranging from 0.66 to 0.79 for the six factors (Ottenbacher, Kuo & Ostir, 2007). The scale has been confirmed to possess a high degree of predictive validity (Abbott, 2006). The total variance reported by the scale is 68 percent (Akin, 2008).

Satisfaction with Life Scale: Shin and Johnson (1978, p. 478) define life satisfaction as a "global assessment of a person's quality of life according to his chosen criteria". Judgments of life satisfaction are made when an individual compares his circumstances to a standard that is

considered appropriate. It is based on a person's own judgment and not an externally imposed criterion (Diener & Emmons, 1984). Thus, there is a need to ask the person to evaluate his or her life as a whole and not to sum up the satisfaction levels in different areas of life. The satisfaction with life scale by Diener et al was proposed in 1985. This is a multi-item scale designed for the purpose of asking people to evaluate their lives in totality. The scale measures global life assessment but not related constructs like loneliness or positive affect. It can be used across different age groups unlike other scales like Life Satisfaction Index by Havighurst, Neugarten and Tobin (1961) and Philadelphia Geriatric Center Morale Scale by Lawton (1975) which were appropriate only for geriatric populations (Diener et al.,1985) and despite their names measured zest vs apathy along with life satisfaction (Neugarten et al., 1961). The scale is a 5 item instrument with a Likert scale format. The scores range from 1 to 7 with response categories as strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree and strongly agree. A total score of life satisfaction is then calculated by adding the scores on individual responses. The scale has a Cronbach alpha value of 0.87 (Diener et al., 1985) and construct validity of the scale has been established (Kyriazos et al., 2018). The total variance reported by the scale is 66 percent (Diener et al., 1985).

Occupational Stress Scale for Soldiers: This scale was developed as a part of this thesis in the study 1. This scale measures various dimensions of occupational stress experienced by soldiers. The exploratory and confirmatory factor analysis provided support for the four factors solutions. These factors are: Job related stressors, Individual/Personal stressors, Administrative stressors, and Group/Team stressors. The scale was constituted on a Likert scale format with ratings from 0 (Does not apply to me at all), 1(Applies to me to some degree or some of the time), 2 (Applies to

me to a considerable degree or a good part of the time) and 3 (Applies to me very much or most of the time). There are total 37 items. Out of the 37 items, 23 were positive (items 3, 9, 11, 14, 15, 17, 18, 20, 22-32, 34-37) and 14 were negative items (1, 2, 4-8, 10, 12, 13, 16, 19, 21, 33). The cronbach alpha and composite reliability values of the scale are 0.74 and 0.76 respectively. The scale also satisfies the criteria for convergent and divergent validity.

5.5 Results

5.5.1 *Descriptive Statistics*

Descriptive statistics like mean, standard deviation (SD), range, skewness and kurtosis were tested for all the variables of the study. The data was found to be approximately normally distributed based on the general rule of thumb of skewness and/or kurtosis to be less than ±1.96 (Field, 2013). The data was found to be approximately normally distributed based on the skewness and kurtosis values. Following Table 5.5 shows the results of the descriptive statistics of all variables.

Table 5.5

Descriptive statistics of all study variables

Variables	Range	Minimum	Maximum	Mean	SD	Variance	Skewness	Kurtosis
Social Isolation	56	20	76	47.04	6.82	46.51	-1.12	1.52
Death Anxiety	6	4	10	6.29	3.33	11.08	-0.09	0.17
Personality							1.02	0.67
Extraversion	8	2	10	4.13	1.18	1.39		
Agreeableness	8	2	10	4.54	1.29	1.66		
Conscientiousness	8	3	11	4.69	1.26	1.58		
Emotional Stability	9	2	11	4.34	1.24	1.53		
Openness to Experience	4	1	5	0.42	1.18	1.39		
Resilience	10	15	25	20	1.58	2.49	0.48	1.21
Leader-Member Exchange	15	20	35	22.96	0.18	0.03	-0.005	0.31
Group Cohesion							0.09	0.44
Engaged	25	5	30	22.04	1.10	1.21		
Conflict	16	4	20	12	1.23	1.51		
Avoiding	9	3	12	12	1.17	1.36		
Psychological Well-being	80	142	222	159.60	19.59	383.76	1.12	0.91
Subjective Well-being	15	15	30	21.89	6.01	36.12	-0.21	-0.59
Occupational Stress	20	40	60	57.1	9.1	82.81	-0.86	1.34
Job Related	5	17	22	18.83	4.39	19.27		
Individual/Personal	5	13	18	15.01	3.07	9.42		
Administrative	3	10	13	8.53	3.35	11.22		
Group/Team	5	4	9	5.02	1.01	1.02		

Occupational stress level among the soldiers

The occupational stress level in the total sample of 700 depicts an overall moderate level of stress. The stressors affecting the soldiers in order of magnitude are job related stressors, followed by individual/personal, administrative and group stressors.

Subjective and Psychological well-being among the soldiers

The subjective well-being of the sample has been found to be in the category of "slightly satisfied" meaning that the soldiers are not very satisfied with their lives in the present scenario. As far as the measure of psychological well-being is concerned it shows a high level of psychological well-being among the current sample.

5.5.2 *Exploratory Factor Analysis of All Scales*

Exploratory Factor Analysis was carried out on all these scales to explore their factor structures in the present sample. This was essential because none of these scales (apart from Occupational Stress Scale) have been standardized on a military sample which is qualitatively very different from the usual samples of civilians. The EFA was conducted on 350 sample after randomly splitting the total sample (700) into two halves. The other half was used for confirmatory factor analysis (CFA). The results of the EFA are shown in the following table.

Table 5.6

EFA parameters of all scales

S.No	Scales	No. of Factors	No. of Items	No. of Items Retained	Total Variance Explained	KMO Value	Item Loading Range
1	UCLA Loneliness Scale	1	20	20	60.31	0.74	0.66- 0.78
2	Death Anxiety Scale	1	15	15	66.23	0.71	0.65-0.78
3	Ten Item Personality Inventory	5	10	10	57.5	0.75	0.55-0.72
4	Brief Resilience Scale	1	6	4	58.74	0.53	0.68-0.75
5	Leader Member Exchange 7 Questionnaire	1	7	7	61.10	0.84	0.62-0.72
6	Group Climate Questionnaire	3	12	12	59	0.71	0.58-0.80
7	Ryff's Psychological Well-being Scale	1	42	38	58.78	0.83	0.56-0.73
8	Satisfaction With Life Scale	1	5	5	57.2	0.82	0.51-0.85
9	Occupational Stress Scale for Soldiers	4	37	37	61.11	0.71	0.60-0.78

The overall picture obtained after the EFA of all the nine scales looks promising. Most of the factors explored on this sample of soldiers show a very similar factor structure to what the scales originally propose. Other important parameters of total variance, skewness, kurtosis, KMO values and item loading range have also been satisfactorily met. This lends support to the foundation on which this study whose aim is to test the proposed theoretical model of soldier well-being is based. The next step was to carry out CFA of all the nine variables of the study to further validate the factors under study before path analysis is carried out to understand the nature of relationships amongst them.

5.5.3 ***Confirmatory Factor Analysis of all Scales*****:** After the EFA results of all the nine scales were found to be acceptable, confirmatory factor analysis was carried out to further substantiate their validity in the context of our sample. This analysis was carried out on another sample of 350.

In this section, the model fit indices along with AVE, MSV and standardized regression weight values have been discussed. The model fit indices used for the analysis were CMIN/df, GFI, CFI, NFI, SRMR, RMSEA and Pclose along with AVE, MSV and standardized regression weight values. These parameters have been described in detail in the earlier chapter 4. The results that were obtained after the analysis are reported in Table 5.8.

Table 5.7

Model fit indices of all measures used in the present study

S.No	Variables	*CMIN/ df*	*GFI*	*CFI*	*NFI*	*SRMR*	*RMSEA*	*P Close*
1	Psychological Well-being	2.02	0.77	0.96	0.91	0.07	0.05	0.06
a	Autonomy							
b	Environmental mastery							
c	Personal growth							
d	Positive relations							
e	Purpose in life							
f	Self-acceptance							
2	Group climate	2.95	0.90	0.71	0.91	0.04	0.04	0.09
a	Engaged							
b	Conflict							
c	Avoiding							
3	Personality	3.33	0.86	0.70	0.93	0.07	0.05	0.11
a	Extraversion							
b	Agreeableness							
c	Conscientiousness							
d	Emotional stability							
e	Openness to experience							
4	Death anxiety	2.11	0.91	0.95	0.92	0.07	0.07	0.03
5	Resilience	1.21	0.85	0.97	0.96	0.03	0.02	0.06
6	Subjective Well-being	3.53	0.99	0.98	0.98	0.03	0.04	0.21
7	Social isolation	3.94	0.96	0.77	0.93	0.05	0.02	0.08
8	Leadership	2.22	0.95	0.96	0.88	0.07	0.33	0.12
9	Occupational stress	2.68	0.90	0.95	0.85	0.06	0.04	0.69
a	Job related							
b	Individual/Personal							
c	Administrative							
d	Group/Team							

Note. *CMIN/df* = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

Table 5.8

Validity of all measures used in the present study

S.No	**Variables**	***AVE***	***MSV***	***Std. Regression Weights***
1	Psychological Well-being			0.60 to- 0.69
a	Autonomy	0.65	0.43	
b	Environmental mastery	0.66	0.21	
c	Personal growth	0.62	0.21	
d	Positive relations	0.71	0.65	
e	Purpose in life	0.70	0.62	
f	Self-acceptance	0.82	0.33	
2	Group climate			0.62 to 0.75
a	Engaged	0.53	0.51	
b	Conflict	0.56	0.49	
c	Avoiding	0.63	0.32	
3	Personality			0.60 to -0.66
a	Extraversion	0.51	0.11	
b	Agreeableness	0.55	0.47	
c	Conscientiousness	0.57	0.52	
d	Emotional stability	0.71	0.42	
e	Openness to experience	0.65	0.30	
4	Death anxiety	0.77	NA	0.71 to 0.82
5	Resilience	0.63	NA	0.61 to 0.69
6	Subjective Well-being	0.92	NA	0.58 to 0.63
7	Social isolation	0.78	NA	0.60 to 0.86
8	Leadership	0.97	NA	0.70 to 0.78
9	Occupational stress			0.62 to 0.77
a	Job related	0.75	0.50	
b	Individual/Personal	0.87	0.52	
c	Administrative	0.95	0.46	
d	Group/Team	0.67	0.61	

Note. *AVE* = Average Variance Extracted. *MSV* = Maximum Shared Variance. *Std. Regression Weights* = Standardized Regression Weights.

Table 5.9

Reliability of all measures used in the present study

Variables	Cronbach alpha	Composite Reliability
Social Isolation	0.81	0.71
Death Anxiety	0.71	0.68
Personality	0.70	
Extraversion	0.67	0.73
Agreeableness	0.72	0.70
Conscientiousness	0.68	0.67
Emotional Stability	0.71	0.65
Openness to Experience	0.70	0.72
Resilience	0.70	0.74
Leadership	0.85	0.72
Group Cohesion	0.74	
Engaged	0.70	0.70
Conflict	0.76	0.70
Avoiding	0.69	0.69
Psychological Well-being	0.72	0.74
Subjective Well-being	0.79	0.72
Occupational Stress	0.71	
Job Related	0.71	0.80
Individual/Personal	0.70	0.72
Administrative	0.73	0.71
Group/Team	0.70	0.71

It is evident from the above table that most of the criteria of the model fit indices, convergent and discriminant validity, standardized regression weights, cronbach alpha and composite reliability measures were satisfactorily met as per the results obtained after CFA. This further validates the testing of the proposed theoretical model of soldier well-being. The next step after

the CFA was to run path analysis on the data to analyze how the variables are interacting with each other to influence the SWB and PWB of the soldiers.

5.6 Structural Equation Modeling (SEM)

Structural equation modeling is a statistical method that is increasingly being used in scientific studies in the field of social sciences in recent years. The most important reason for the popularity of this technique is its ability to test direct and indirect relationships among causal variables in a single model (Civelek, 2018). Structural equation is used to test the relationships between observed and latent variables. Observed variables are the measured variables in the data collection process and latent variables are the variables measured by connecting to the observed variables because they can't be directly measured. Since this technique confirms the correspondence of the data of the relations in the theoretical model, it can be said that structural equation modeling is more suitable for testing the hypothesis as compared to other methods (Civelek, 2018). Structural equation modeling consists of a system of linear equations. The key in the regression analysis is to determine how much of the change in the dependent variable can be explained by the independent variable or variables. Even though multiple regression analysis can only be applied in the case of observed variables, the basic principles can be applied to structural equation modeling as well (Kline, 2011). Differently from the regression, structural equation modeling can test research hypotheses in a single process by modeling complex relationships among many observed and latent variables. In traditional regression analysis, only direct effects can be measured whereas both direct and indirect effects can be measured using SEM (Civelek, 2018).

Structural Equation Modeling consists of two basic components namely structural model and measurement model (Civelek, 2018). In the first stage, the measurement model is tested while

in the second stage the structural model is tested. The measurement model measures how well hidden variables are represented by the observed variables. It is mainly confirmatory factor analysis (CFA) and indicates the construct validity of scales. Therefore, if the measurement model fit indices are low, it will not make sense to test the structural model (Dursun & Kocagöz, 2010). The measurement model and the structural model are interwoven. But the structural equation modeling is majorly based on the confirmatory approach. It is based on the statistical confirmation of the theoretical model. For this reason, the measurement model is confirmatory factor analysis (Civelek, 2018). Since confirmatory factor analysis and the model fit indices have already been described in detail previously, they will not be repeated in this section.

Assumptions of SEM

In structural equation models, many regression equations work together, whether in the structural model or in the measurement model part. Therefore the assumptions that apply to the regression models are also valid for the structural equation models. According to Basak et al (2013) following assumptions are applied to SEM-

(1) Observed variables have multivariate normality: The multivariate normal distribution is the most important assumption of the maximum likelihood estimation method used in structural equation modeling.

(2) Linearity: Structural equation modeling is a component of factor and regression analysis. Therefore, linearity, which is the most important assumption of regression analysis, also applies to structural equation modeling. In the structural equation model, it is assumed that there exist linear relationships between latent variables and also among the observed and latent variables.

(3) Absence of outliers: The presence of outliers affect the significance of the existence model in a negative way.

(4) Multiple measurements: In the structural equation model, it is advisable that three or more observed variables be used to measure each latent variable.

(5) No multicollinearity: It is assumed that there is no high correlation between the independent variables in the structural equation model.

(6) Sample size: In the structural equation modeling, many fit indices are influenced by the sample size. It is advisable that a minimum sample size of 150 is recommended for structural equation models (Bentler & Chou, 1987). It should be noted that the minimum sample size used in the structural equation modeling method is at least 10 times the number of parameters that can be estimated in the model (Jayaram, Kannan, & Tan, 2004).

Types of Structural Equation Models

There are four basic types of structural equation models namely: path analysis, confirmatory factor analysis, structural regression and latent change models (Civelek, 2018). The confirmatory factor analysis was already discussed in the last chapter. Path analysis will be discussed here as it is used in this research. The models established with only observed variables are called path analysis models. The basis of the structural equation modeling depends upon path analysis. Path analysis was first implemented in the 1920s and was developed by biologist Sewall Wright (Taşkın & Akat, 2010). The path analysis is similar to multiple regression in the sense that it is done using observed variables. But it is superior to multiple regression. This is because there is one dependent variable in the multiple regression but there may be more than one dependent variables in the path analysis. Also a variable can be both a dependent variable and an independent variable in

a path analysis model. In this model, more than one regression model can be analyzed and indirect and direct effects can be measured all at the same time. Direct effect is the effect of one variable on another variable without any mediation. However, the indirect effect arises from the intervention of a variable which is playing the role of a mediator between independent and dependent variables. This variable is named as the mediator variable. The sum of the direct effect and the indirect effect of a variable on another variable is called the total effect (Raykov & Marcoulides, 2006).

5.7 Path Analysis of Theoretical Models

Path analysis was conducted on the total sample of 700. The results obtained from the analysis are described in terms of Risk, Protective and Moderator Factors Models which are as follows:

5.7.1 *Results of the Risk Factors Model*

This model proposed to identify the potential risk factors to a soldier's well-being. The variables of social isolation, occupational stress and death anxiety were included in this model as independent variables. The effect of these on the subjective and psychological well-being of the soldiers were studied making them the dependent variables in this model. All the seven model fit indices of CMIN/df, CFI, GFI, NFI, SRMR, RMSEA and PClose were satisfactorily met (Table 5.11). This lends strong validity to this model as far as our sample is concerned.

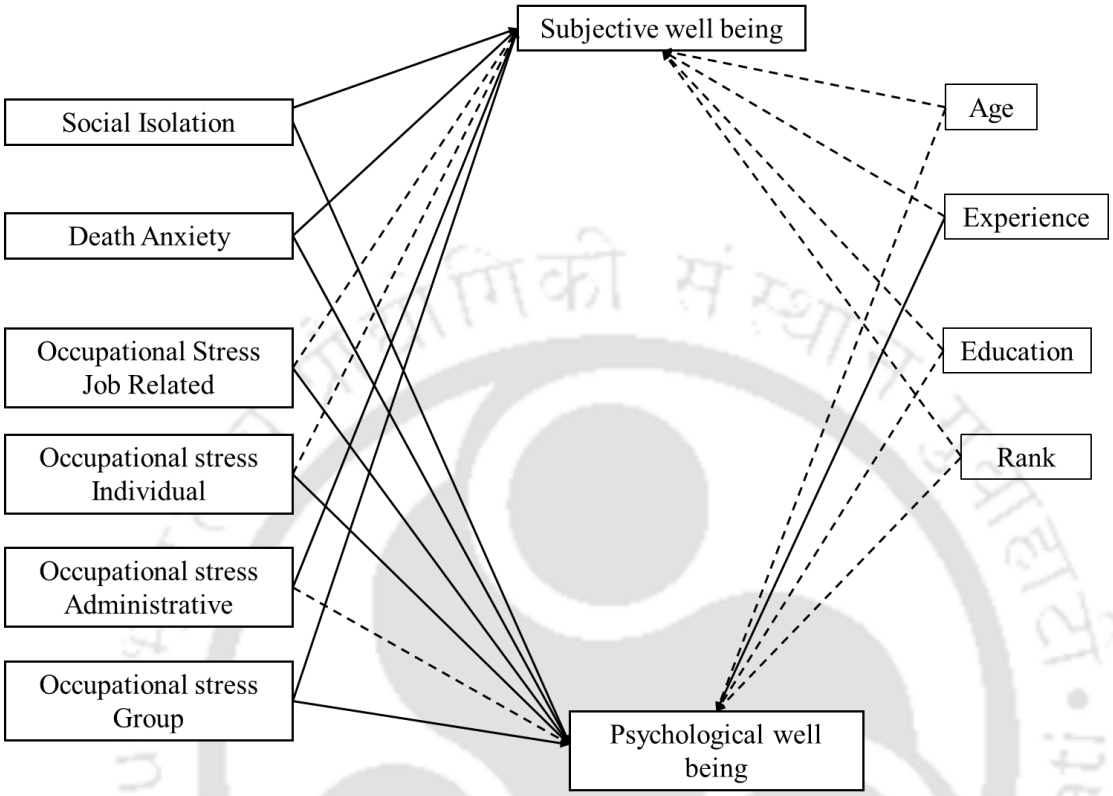

Fig 5.4. Path analysis of the risk factor model (Black lines represents significant pathways)

Table 5.10

Standardized Regression Weights of Risk Factor Model

Variables	**SWB**	**PWB**
Death Anxiety	-0.121***	0.064*
Occupational Stress (Job Related)	0.056	-0.090**
Occupational Stress (Individual)	-0.014	-0.120**
Occupational Stress (Administrative)	-0.216***	0.031
Occupational Stress (Group)	-0.112*	-0.174***
Social Isolation	-0.237***	-0.496***
Age	0.048	0.032
Years of service (Experience)	-0.032	-0.152**
Education	-0.029	0.015
Rank	-0.021	0.011

Note. $*p < 0.05$, $**p < 0.01$

Table 5.11

Model Fit Measures for the risk factor model

Model fit measures	Values
CMIN/df	2.96
GFI	0.982
SRMR	0.043
RMSEA	0.064
CFI	0.974
NFI	0.966
PClose	0.066

Note. CMIN/df = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose

In this model the effects of the Risk Factors of Social isolation, Death anxiety and Occupational stress were studied on the Dependent variables of Subjective (SWB) and Psycological Well-being (PWB) while controlling the effects of education, age, rank and experience levels in the sample (Figure 5.4). The black lines in the figure 5.4 represent the relationships that were found to be significant while the dotted lines show insignificant relationships among the variables.

The analysis in the model suggests a very highly significant negative predictive relationship between death anxiety and subjective well-being (Table 5.9). However, interestingly, death anxiety positively predicted psychological well-being. This finding reflects an interesting

dynamics of death anxiety with psychological well-being. Among the occupational stress dimensions, only *group stressors* predicted significantly (negatively) both the subjective and psychological well-being dimensions. *Job related and individual stressors* significantly (negatively) predicted only psychological well-being. However, *administrative stressors* significanly (negatively) predicted only subjective well-being. Similarly, *social isolation* significantly (negatively) predicted both the subjective and psychological well-being dimensions. Among the control variables, only years of service significantly predicted PWB of the soldiers which is an likely indication of a progressive detereoration in the well-being levels of the soldiers over time due to the cumulative occupational stress and other risk factors.

The results of hypotheses associated with the risk factors are summarized below-

H1: Social isolation will negatively impact both SWB and PWB.

Social isolation was found to significantly (negatively) predict both subjective and psychological well-being hence this hypothesis is accepted.

H2: Occupational stress will negatively impact both SWB and PWB.

Only one dimension of occupational stress namely group/team stressors was found to significantly (negatively) predict subjective and psychological well-being out of the four dimensions. Hence this hypothesis is partially accepted.

H3: Death anxiety will negatively impact both SWB and PWB.

Death anxiety predicted a significantly negative relationship with subjective well-being and a significantly positive relationship with psychological well-being. Hence this hypothesis is partially accepted.

5.7.2 *Results of the Protective Factors Model*

This model proposed to identify the potential protective factors to a soldier's well-being. The variables of personality, resilience, leadership and group cohesion were included in this category as the independent variables. The effect of these on the subjective and psychological well-being of the soldiers were studied making them the dependent variables in this study. All the seven model fit indices of CMIN/df, CFI, GFI, NFI, SRMR, RMSEA and P Close were satisfactorily met (Table 5.13).This lends support to the validity of this model as far as our sample is concerned.

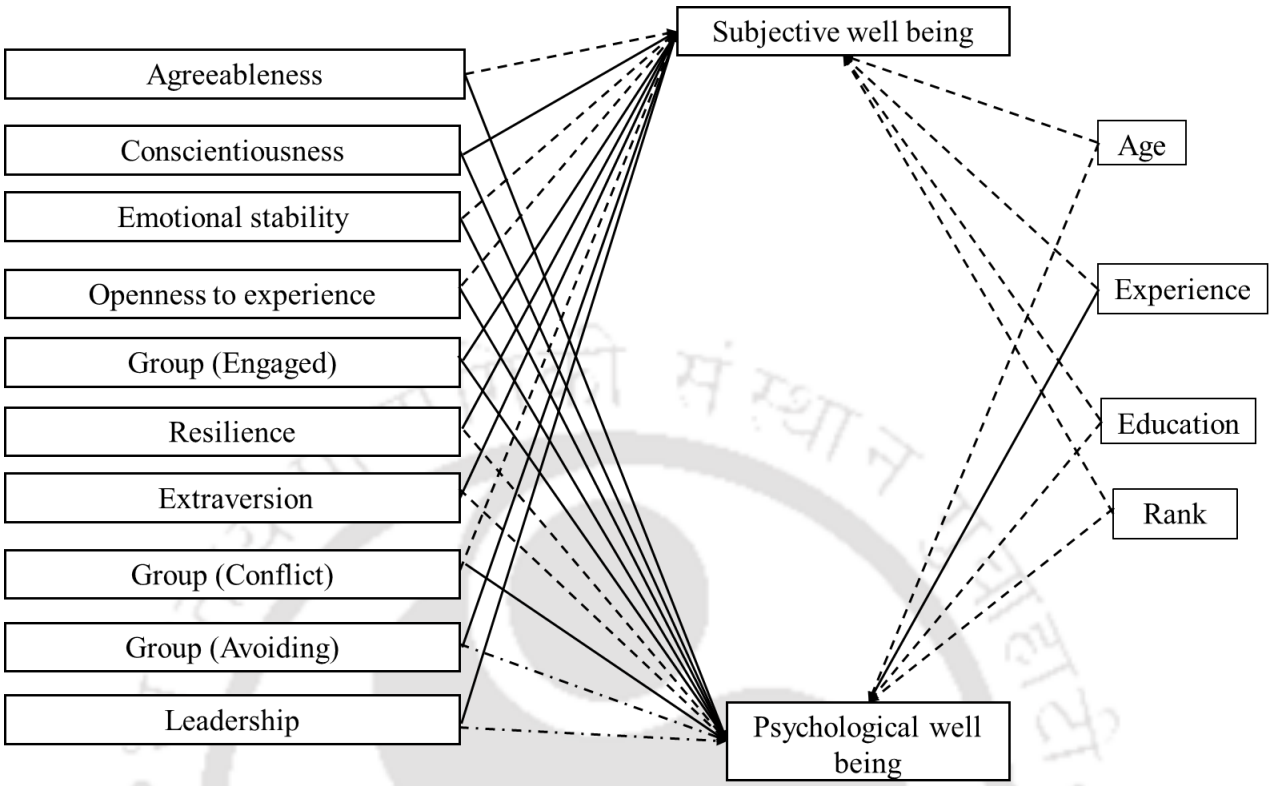

Fig 5.5.Path analysis of the Protective Factors Model (Black lines represents significant pathways)

Table 5.12

Standardized Regression Weights for Protective Factors Model

Variables	SWB	PWB
Agreeableness	0.055	0.209***
Conscientiousness	0.092*	0.231***
Emotional stability	0.001	0.172***
Openness to experience	0.035	0.253***
Extraversion	-0.071*	0.055
Group climate (Engaged)	0.383***	0.305***
Group climate (Conflict)	0.047	-0.186***
Group climate (Avoiding)	0.137***	0.021
Leadership	0.200***	-0.022
Resilience	0.146***	0.049
Education	0.001	0.019
Age	-0.012	0.045
Years of service (Experience)	0.053	-0.141*
Rank	0.007	0.074

Note. * $p < 0.05$, ** $p < 0.01$

Table 5.13

Model Fit Measures for the protective factors model

Model fit measures	Values
CMIN/df	2.757
GFI	0.984
SRMR	0.030
RMSEA	0.050
CFI	0.982
NFI	0.972
PClose	0.471

Note. CMIN/df = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

In this model the effects of the Protective Factors of Personality, Leadership, Resilience and Group cohesion were studied on the Dependent variables of Subjective (SWB) and Psychological Well-being (PWB) while controlling the effects of education, age, rank and experience levels in the sample. The results of this model is shown in figure 5.5. The black lines represent the relationships that were found to be significant while the dotted lines show insignificant predictor relationships among the variables.

The variables of Personality and Group cohesion were analysed in regards to their various dimensions while the other variables were studied as single factors. Among the personality

factors, only Agreeableness, Conscientiousness, Openness to experience and Emotional stability significantly (positively) predicted PWB. However, Conscientiousness also significantly (positively) predicted SWB. Interestingly, the personality dimension of Extroversion negatively predicted SWB which is in contrast to the findings of the existing literature on civilian sample. In terms of Group cohesiveness, a group climate that is engaging has been found to be very highly significantly and positively predictive of both SWB and PWB. Avoidance of certain group members is also very highly significantly and a positive predictor of SWB. A conflicting group climate on the other hand, very significantly impacts the soldier in a negative way as far as the PWB is concerned. Leadership (quality of leader-follower relationship) and Resilience are very highly positively and significant predictors of SWB Similar to the Risk Factors Model, here also a strong negative predictor relationship can be seen in the number of years spent in the Army and PWB of the soldiers.

The results of hypotheses associated with the protective factors are summarized below-

H4: Personality traits will impact both SWB and PWB.

Among the personality factors, only Agreeableness, Conscientiousness, Openness to experience and Emotional stability significantly (positively) predicted PWB. Conscientiousness significantly (positively) predicted SWB while Extroversion negatively predicted SWB. Hence this hypothesis is partially accepted.

H5: Resilience will positively impact both SWB and PWB.

Resilience was found to be a highly significant (positive) predictor of subjective well-being but not psychological well-being. Hence this hypothesis is partially accepted.

H6: The quality of leader-follower relationship will positively impact both SWB and PWB.

The quality of leader-follower relatonship was found to be a highly significant (positive) predictor of subjective well-being but not psychological well-being in this sample. Hence this hypothesis is partially accepted.

H7: Group cohesion will impact both SWB and PWB.

Among the dimensions of group cohesion, group engagement has been found to be very highly significantly and positively predictive of both SWB and PWB. Avoidance is also a very highly significantly and a positive predictor of SWB and a conflicting group climate very significantly (negatively) predicts psychological well-being in this sample. Since no significant relationships could be established between avoidance and psychological well-being and group conflict and subjective well-being, hence this hypothesis is partially accepted.

5.7.3 *Results of the Moderated Path Model*

In this model the moderating role of some protective factors were studied on the relationship between the risk factors (independent variables) and Subjective and Psychological well-being (dependent variables). In order to test the moderating effects, new cross terms or interaction variables were created by multiplying the centralized scores of each independent variable (risk factors) and the moderator variables (protective factors). These interaction variables represented the combined effect of each risk and protective factor, which were then regressed on the dependent variables. The demographic variables of age, educational qualification, rank, and experience were incorporated as control variables in the model. The model is below (Figure 5.6).

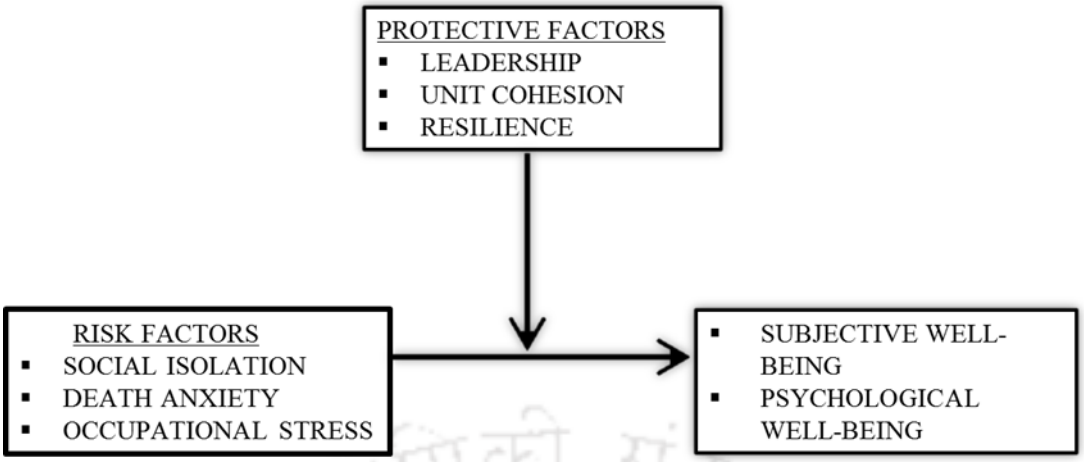

Fig 5.6. Moderator factor model

The analysis of the result shows that only four interactions were significant. They are-

1. Group Engagement (a dimension of group cohesion) as the moderator between social isolation and SWB
2. Resilience as the moderator between death anxiety and SWB
3. Leadership (leader-member exchange) as the moderator between death anxiety and SWB
4. Group Engagement (a dimension of group cohesion) as the moderator between occupational stress and SWB

All of them are concerned with the dependent variable of Subjective well-being. In relation to psychological well-being none of the moderator variables were found to have a statistically significant impact in this model. The details of these significant moderators are discussed below.

Moderating Role of Group Engagement in the Relationship Between Social Isolation and SWB

Table 5.14 shows the details of the moderating effects of group engagement in the relationship between social isolation and SWB. Furthermore, table 5.15 shows the model fit indices of this moderation model.

Table 5.14

Standardized regression weights of the moderated path model (Moderating effect of group engagement between social isolation and SWB)

Variables	**SWB**
Social Isolation	-.215***
Social Isolation_X_Group Engagement	.127***
Group Engagement	.511***
Age	.004
Education	.000
Rank	.024
Experience	0.008

Note.* $p < 0.05$ **$p < 0.01$

Table 5.15

Model Fit Measures of the moderated path model (moderating effect of group engagement between social isolation and SWB)

Model fit measures	Values
CMIN/df	1.291
GFI	0.997
SRMR	0.013
RMSEA	0.115
CFI	0.996
NFI	0.996
PClose	0.030

Note. CMIN/df = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

In order to understand the specific directions of the moderation, interaction graph was plotted (Figure 5.7)

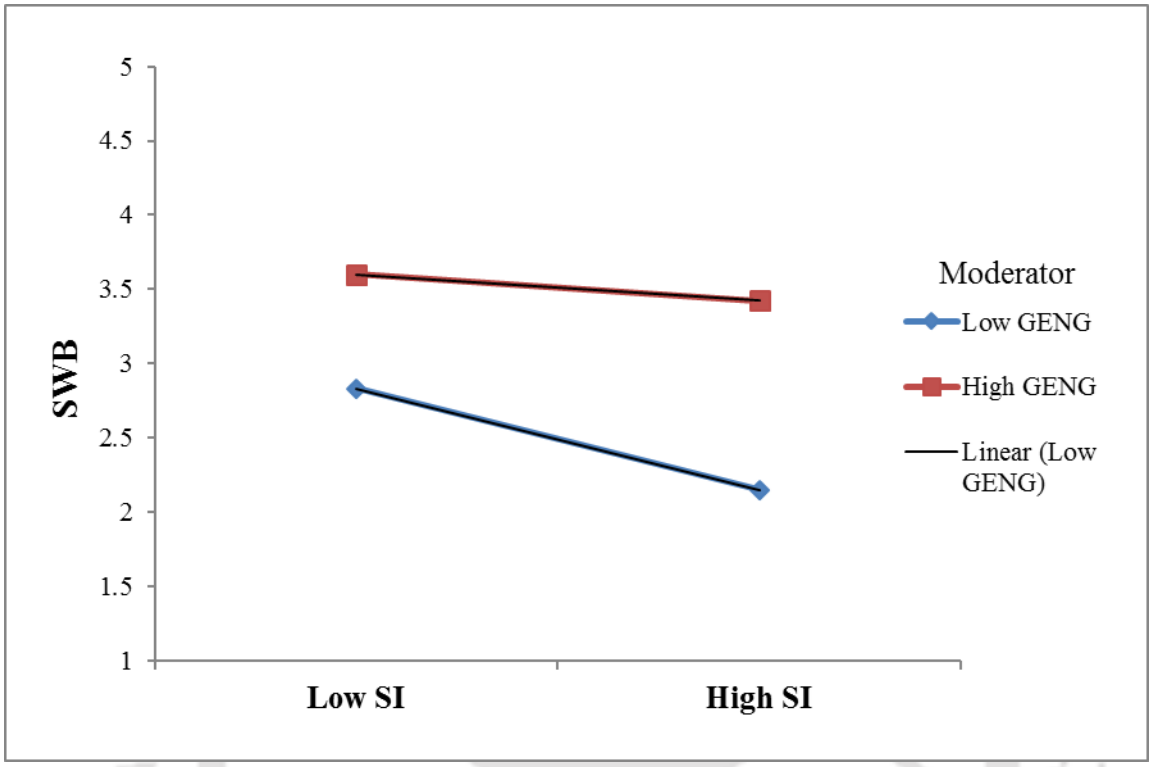

Fig 5.7. Moderating graph depicting the relationship between SWB and social isolation with group engagement as the moderating variable

From figure 5.7 it is evident that group engagement dampens the negative relationship between Social isolation and SWB after controlling the effects of education, age, rank and experience levels in the sample. In other words, engaging in a group helps to reduce the negative impact of social isolation (perceived loneliness) on SWB of the soldiers.

Moderating Role of Resilience in the Relationship Between Death Anxiety and SWB

Table 5.16 shows the details of the moderating effects of resilience in the relationship between death anxiety and SWB. Furthermore, table 5.17 shows the model fit indices of this moderation model.

Table 5.16

Standardized regression weights of the moderated path model (Moderating effect of resilience between death anxiety and SWB)

Variables	**SWB**
Death Anxiety	-.084**
Death Anxiety_X_Resilience	.071**
Resilience	.267***
Age	.123**
Education	-.034
Rank	-.110**
Experience	0.014

Note. $p < 0.05$ **$p < 0.01$

Table 5.17

Model Fit Measures of the moderated path model (moderating effect of resilience between death anxiety and SWB)

Model fit measures	Values
CMIN/df	37.86
GFI	0.935
SRMR	0.056
RMSEA	0.02
CFI	0.935
NFI	0.936
PClose	0.00

Note. *CMIN/df* = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

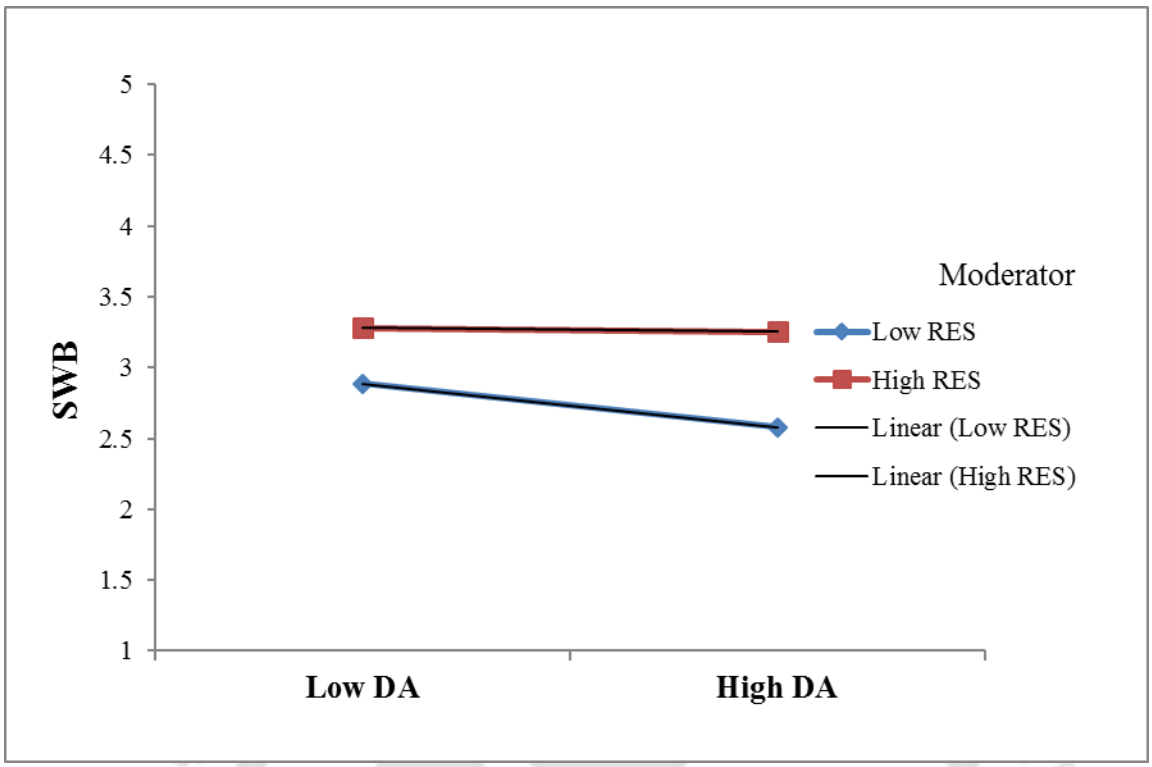

Fig 5.8. Moderating graph depicting the relationship between SWB and death anxiety with resilience as the moderating variable

From figure 5.8 it is evident that Resilience dampens the negative relationship between Death anxiety and SWB. In other words, resilience helps to reduce the negative impact of death anxiety on SWB of the soldiers.

Moderating Role of Leadership (quality of leader-member exchange) in the Relationship Between Death Anxiety and SWB

Table 5.18 shows the details of the moderating effects of leadership in the relationship between death anxiety and SWB. Furthermore, table 5.19 shows the model fit indices of this moderation model.

Table 5.18

Standardized regression weights of the moderated path model (Moderating effect of leadership between death anxiety and SWB)

Variables	**SWB**
Death Anxiety	-.064
Death Anxiety_X_Leadership	.103**
Leadership	.423***
Age	.128**
Education	-.007
Rank	-.127**
Experience	.009

Note. $p < 0.05$ ** $p < 0.01$

Table 5.19

Model Fit Measures of the moderated path model (moderating effect of leadership between death anxiety and SWB)

Model fit measures	**Values**
CMIN/df	13.96
GFI	0.981
SRMR	0.028
RMSEA	0.035
CFI	0.986
NFI	0.980
PClose	0.03

Note. CMIN/df = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

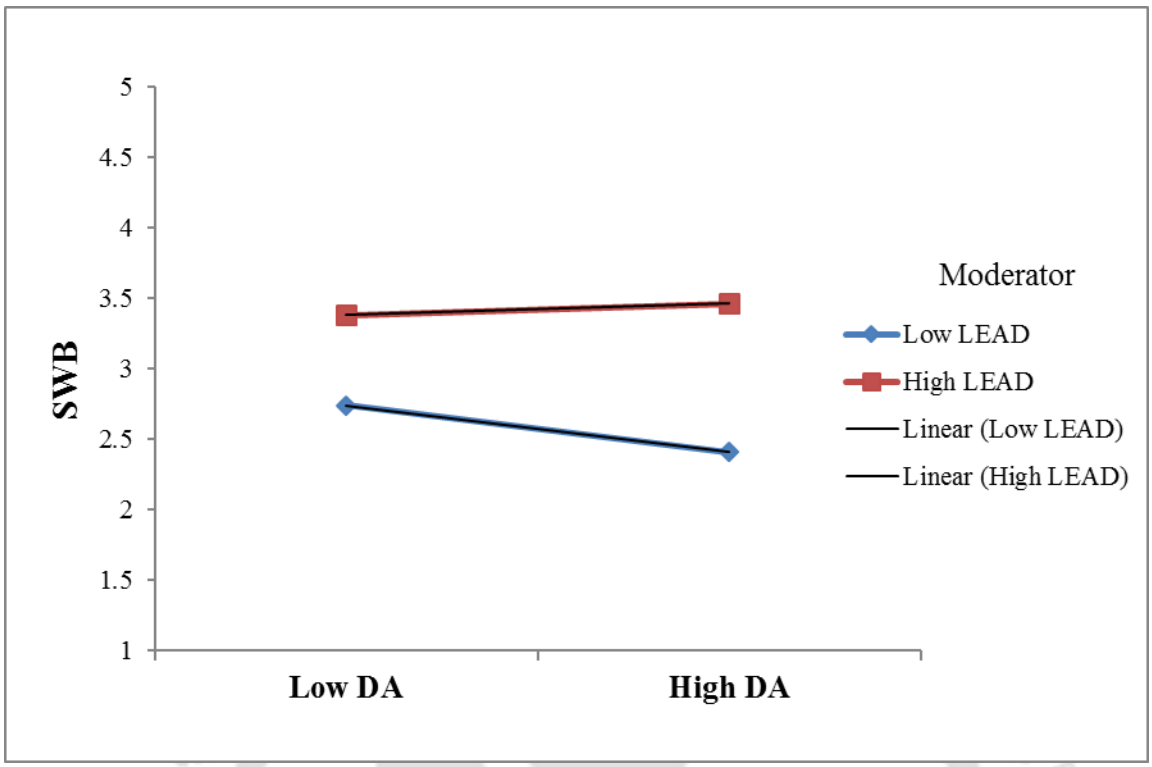

Fig 5.9. Moderating graph depicting the relationship between SWB and death anxiety with leadership as the moderating variable

From figure 5.9 it is evident that leadership dampens the negative relationship between death anxiety and SWB. In other words, leadership helps to reduce the negative effect of death anxiety on SWB of the soldiers.

Moderating Role of Group Engagement in the Relationship Between Occupational Stress and SWB

Table 5.20 shows the details of the moderating effects of group engagement in the relationship between occupational stress and SWB. Furthermore, table 5.21 shows the model fit indices of this moderation model.

Table 5.20

Standardized regression weights of the moderated path model (Moderating effect of group engagement between occupational stress and SWB)

Variables	**SWB**
Occupational Stress	-.179***
Occupational Stress X Group Engagement	.099**
Group Engagement	.517***
Age	.043
Education	.007
Rank	-.013
Experience	.0011

Note. $p < 0.05$ **$p < 0.01$

Table 5.21

Model Fit Measures of the moderated path model (moderating effect of group engagement between occupational stress and SWB)

Model fit measures	Values
CMIN/df	1.11
GFI	0.994
SRMR	0.019
RMSEA	0.145
CFI	0.991
NFI	0.990
PClose	0.040

Note. CMIN/df = Chi-square. *GFI* = Goodness of Fit Index. *CFI* = Comparative Fit Index. *NFI* = Normed Fit Index. *SRMR* = Standardized Root Mean Square Residual. *RMSEA* = Root Mean Square Error of Approximation. *PClose* = PClose.

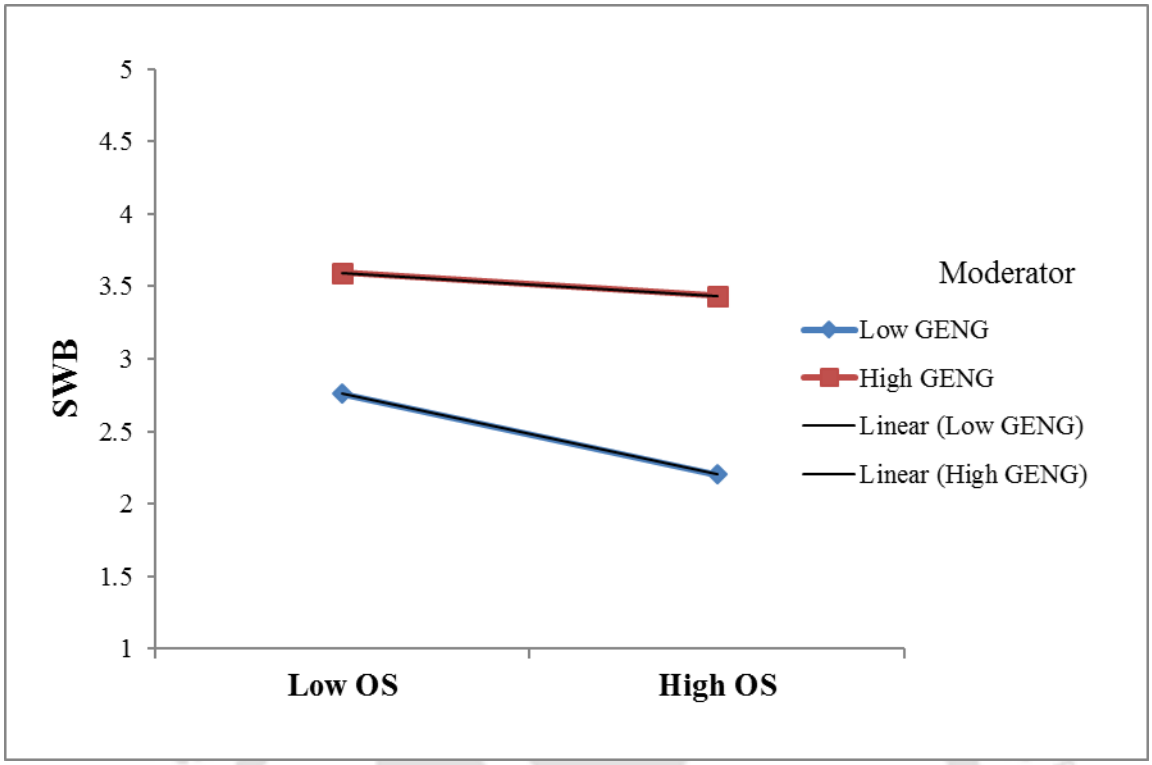

Fig 5.10. Moderating graph depicting the relationship between SWB and occupational stress with group engagement as the moderating variable

From figure 5.10 it is evident that group engagement dampens the negative relationship between Occupational stress and SWB. In other words, engaging in a group reduces the negative impact of occupational stress on SWB of the soldiers.

The results of hypotheses associated with the moderator factors are summarized below-

H8: Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

Resilience was found to be a significant moderator between death anxiety and SWB. Since it did not act as a significant moderator as far as death anxiety and PWB and variables of social

isolation and occupational stress (vis a vis SWB and PWB) are concerned, hence this hypothesis is partially accepted.

H9: The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

The quality of leader-member exchange was found to be a significant moderator between death anxiety and SWB. Since it did not act as a significant moderator as far as death anxiety and PWB and variables of social isolation and occupational stress (vis a vis SWB and PWB) are concerned, hence this hypothesis is partially accepted.

H10: Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.

Group Engagement (one of the three dimensions of group cohesion) was found to be a significant moderator between occupational stress and SWB along with social isolation and SWB. No such relationship could be established with PWB. The other dimensions of group cohesion namely, group avoidance and conflict were also not found to be significant moderators as far as any of the risk factor variables and dependent variables go. Hence this hypothesis is partially accepted.

5.8 Summary of Hypotheses Testing Results

The summary of the results of all hypotheses testing are shown in the following table 5.22

Table 5.22

Results of hypotheses testing

Hypothesis No	Statement	Result
1	Social isolation will negatively impact both SWB and PWB of Indian soldiers.	Accepted
2	Occupational stress will negatively impact both SWB and PWB of Indian soldiers.	Partially accepted
3	Death anxiety will negatively impact both SWB and PWB of Indian soldiers.	Partially accepted
4	Personality traits will impact both SWB and PWB of Indian soldiers.	Partially accepted
5	Resilience will positively impact both SWB and PWB of Indian soldiers.	Partially accepted
6	Quality of leader-follower relationship will positively impact both SWB and PWB of Indian soldiers.	Partially accepted
7	Group cohesion will impact both SWB and PWB of Indian soldiers.	Partially accepted
8	Resilience will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted
9	The quality of leader-follower relationship will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted
10	Group cohesion will moderate the relationship between the risk factors (social isolation, occupational stress and death anxiety) and both SWB and PWB.	Partially accepted

In the subsequent chapter, these results will be discussed in detail in accordance with the research questions of the study. Their implications, both practical and theoretical to the lives of the soldiers and future research shall also be elaborated.

Chapter 6

Discussion of Results

This chapter will focus on the detailed discussion of the results reported in chapters 4 and 5 in relation to the research questions of this study.

6.1 Development and validation of "Occupational Stress Scale for Soldiers" (OSSS)

The current research literature offers some insight about how occupational stress can impact the military personnel. Occupational stress that resulted out of routine military work had a significant detrimental impact on the mental health of military personnel (Pflanz & Ogle, 2006) and can lead to impaired alertness, performance and become a threat to safety of human life, economy and nation (Ahmadi et al., 2006). Exposure to combat, being a witness to heavy casualties, deployment in war zones and unexpected mobilizations of units are related to a high level of psychological distress. Being frequently exposed to war zone stressors can also lead to post traumatic stress disorder in military personnel (Litz et al., 1997). Studies conducted by Sharma (2015) and Sandhu, Kaur and Sharma (2011) in India revealed lack of control at work, indifferent organizational attitude, job pressure, role conflict and inadequate awareness about the profession as the major stressors for the soldiers. This is suggestive of an underlying problem related to occupational stress in the Indian Army that has not been delved into. There is no standardized scale available to measure the occupational stress among the Indian Army soldiers. Measurement of occupational stress has far reaching applied and policy implications as the functioning of soldiers which is vital for the security of a nation is related to occupational

stress they experience. Therefore, as part of the study 1, occupational stress scale for soldiers (OSSS) was developed and validated.

The final scale which was developed and validated in four phases has 37 items. The scale showed modest reliability measures in terms of Cronbach's alpha and composite reliability. Exploratory factor analysis on a sample of 350 indicated four factor structure of occupational stress namely *Job related stressors* (13 items), *Individual/Personal stressors* (10 items), *Administrative stressors* (8 items) and *Group/Team stressors* (6 items). Confirmatory factor analysis on another sample of 350 confirmed the four factor structure. Furthermore, convergent validity was demonstrated in terms of factors loadings and reliability scores above 0.7 and AVE above 0.5. The scale also demonstrated discriminant validity in terms of MSV<AVE and Square root of AVE was greater than inter-construct correlations (Hair et al., 2010).

Occupational stress among the soldiers

In study 2, when the OSSS was administered on a sample of 700, it was found that there was a moderate level of occupational stress reported by the overall sample. Job related stressors scored the highest along with Individual/Personal stressors. Administrative and Group/Team stressors showed relatively lower levels of stress. This means that the stressors contributing maximum to a soldier's stress level are the nature of his job and stressors of his individual/personal life. Some common stressors from these categories include, "I feel 24x7 duty hours lead to little or no personal time", " Short career span due to early retirement concerns me", " I am concerned about financial insecurities after retirement", " I stay away from my family and relatives for long durations of time", " I experience performance anxiety in my regular professional tasks" etc. The stressors that scored low were related to the soldier's interactions with the administration and his colleagues, which is a positive scenario. This means

that the soldiers mostly perceived these interactions favorably. One possible reason for moderate and low scores of occupational stress rather than high scores (as opposed to some studies mentioned in the introductory chapter) in our sample may be due to the fact that the sample under study is currently serving in non-border areas. Hence, many of them are possibly staying with their families in the cantonment. This can be a reason for them to have a buffer against the extreme levels of stress because research has been able to establish a direct link between social support and reduction in stress levels especially at the work place (Fenlason, 1994; Wang, 2018; Beehr, 1990; Marcelissen, 1988; Bradley, 2002). Secondly the effect of environment in this case cannot be over looked. Evidence clearly indicates that when soldiers serve in field areas, the combat stress can manifest as acute stress reaction, adjustment disorder and post-traumatic stress disorder (PTSD). The consequences of chronic stress can be in the form of physical and psychological symptoms like headaches, body aches, tiredness, reduced sleep or appetite, lethargy, psychosomatic disorders or psychiatric illnesses (Ryali, Bhat, & Srivastava., 2011). Since this sample of soldiers is serving in peace areas, it can be assumed that the stress levels are within manageable limits. Thirdly, the fact that the soldiers rate their exchanges with the administration as less stress inducing signifies that they have a healthy relationship with their superiors, which can be another protective factor responsible for keeping the occupational stress in check. In our study, we have included leadership as a variable; so even though "administration" may include several elements in the Army, we shall limit it to immediate leadership to keep the discussion streamlined and to avoid confusion. Another reason for doing this is because generally for all practical purposes the soldiers generally interact with their immediate superiors on a day to day basis because of the strict chain of command. Research has been able to establish the link between occupational stress and organizational leadership (Beheshtifar & Nazarian, 2013; Shaw et al., 2011; Mark & Smith, 2012; Sutton et al., 2010). It has been shown that leadership predicts employee stress (Dehue,

Bolman, Völlink, & Pouwelse, 2012), and perceived ineffective leadership is correlated with stress and harm to followers (Lopez, Green, Carmody-Bubb, & Kodatt, 2011; Restubog, Scott, & Zagenczyk, 2011). Fourthly, the scores indicate that the camaraderie between the soldiers is positive since the group/team stressors scored low during the analysis. This is a very important aspect because the soldiers spend the maximum part of their day (in both field and peace areas) with their teammates. Strong and positive bonding between the soldiers is a buffer against the challenges of such a demanding job. Evidence supports it to be true (Ducharme & Martin, 2000).

In a nutshell, we can conclude that the most significant stressors that need to be acted upon as far as the soldiers are concerned are to do with the stressful characteristics inherent in the job itself and providing a support network where the soldier can find help in dealing with his individual/personal stressors.

6.2 Risk Factors for Indian Soldier's Subjective and Psychological Well-being

This research explored three major risk factors for soldier's subjective and psychological well-being. They are-occupational stress, social isolation and death anxiety. Results are discussed below.

Occupational Stress

In our study, it was evident that occupational stress had a significant negative impact on the subjective and psychological well-being of the soldiers. Job related and individual stressors were found to have a significant negative relationship with psychological well-being,

administrative stressors affected subjective well-being negatively while group/team stressors significantly impacted both subjective and psychological well-being in a negative way. This result is in line with the existing researches on this topic conducted on samples that were not from the military background (Suleman et al., 2018; Saka, Kamal, & Alabi, 2018; Tamannaifar & Golmohammadi, 2016; Rothmann, 2008; Goswami & Burman, 2015; Malek, Fahrudin, & M-Kamil, 2009; Adegoke, 2014). As far as the military samples are concerned, the limited research literature points towards the fact that military personnel have managed to adapt themselves to war time hardships but the chronic stressors that they face on an everyday basis are challenging their tolerance limit. The routine military work is impacting their mental health in a negative way (Pfanz & Ogle, 2006). This indicates that the experience of occupational stress is adversely affecting the soldier's subjective well-being in terms of life satisfaction and psychological well-being in terms of self-acceptance, environmental mastery, relationships with others, personal growth, autonomy and purpose in life.

Social Isolation

As discussed earlier in the review of literature chapter, being isolated from family, friends and the outside world due to their nature of job is a big characteristic of a soldier's life. This social isolation may lead to a feeling of loneliness in an individual. The results obtained through the analysis of our sample show a strong negative impact of this social isolation (perceived loneliness) on the SWB and PWB of the soldiers. The findings gain support from researches carried out on non-military samples since there is not much literature available on military samples (VanderWeele, Hawkley & Cacioppo., 2012; Shaheen, & Jahan., 2014; Lim & Kua, 2011; Bhagchandani, 2017; Hombrados-Mendieta, Garcia-Martin, & Gomez-Jacinto, 2013; Shankar, Rafnsson, & Steptoe, 2013; Munir et al., 2015; Smith & Victor, 2018). Studies

conducted on military samples offer indirect support to the results of this study by stating that having an unsupportive partner and family relationships negatively affects an injured service member's ability to deal with stress. Such relationships reinforce their beliefs that they are damaged and not capable of having intimate and trusting relationships. This may worsen their PTSD symptoms (Amir, Badr, & Iqbal., 2011; Erbes et al., 2011). Families that actively engage service members in positive family activities help greatly in avoidance of behaviors such as substance abuse, thrill seeking and excessive video game playing to diminish the effects of distressing events, thoughts and memories (Erbes et al, 2011). Hence the importance of a strong social support network in the life of a soldier.

Death Anxiety

The third risk factor variable in the proposed theoretical model was death anxiety. Death is an ever present danger in the life of the soldier because of the nature of his job. There is very scant research available on the topic of death anxiety, even more so in the domain of its relationship with SWB, PWB or military population. Interestingly, the results from the analysis of our sample show that death anxiety has a significant negative relationship with SWB and a significant positive relationship with PWB amongst Indian soldiers. Therefore, it is likely that death anxiety is a hindrance for positive emotions and life satisfaction. Indirect support for this result comes from the research studies which prove a positive correlation between death anxiety and general anxiety (Abdel-Khalek, 2002) and a negative correlation between general anxiety and SWB (Machado et al., 2018). However, interestingly, for the present sample, death anxiety seems to have a positive impact of psychological well-being. This is in contrast to the results of many studies such as the study conducted by Varaee, Momeni & Moradi in 2018 which found that death anxiety had a negative impact on PWB amongst the elderly population. Earlier

studies have established the link between efforts to cope with one's impermanence that can precipitate the development of symbolic language, creation of art and music and attempts to transcend the human body (Shaver & Mikulincer, 2012) which signify dedication to a cause bigger than one self that adds meaning to life. That is exactly what a soldier does. He dedicates his life to serving the country even at a risk to his own life. In this scenario, one possible explanation that can be drawn for the significant positive relationship between death anxiety and PWB in soldiers is that they are channeling their death anxiety in such a way so as to bring greater meaning to their lives (serving the country) which is leading them to experience an increase in PWB.

6.3 Protective Factors for Indian Soldier's Subjective and Psychological Well-being

This research explored four major potential protective factors for soldier's subjective and psychological well-being. They are-personality, leadership, unit/group cohesion and resilience. The variables of personality and group cohesion were analyzed in regards to their various dimensions while the other variables were studied as single factors.

Personality traits

Personality was assessed on the dimensions of agreeableness, conscientiousness, extraversion, openness to experience and emotional stability. Agreeableness, conscientiousness, openness to experience and emotional stability were found to have a very highly significant positive predictor relationship to PWB in our sample. Previous research has found a similar positive predictor relationship between agreeableness and PWB (Kokko, Tolvanen, & Pulkkinen, 2013;

Reshma & Manjula, 2016). Same can be concluded about conscientiousness and openness to experience (Halama, 2005; Ruiz, 2005; Singh & Singh, 2009; Keyes, Shmotkin & Ryff, 2002; Gutierrez et al., 2005; Ullah, 2017). Conscientiousness makes an individual organized, self-disciplined and dependable which propels them to do their duties on time leading to a reduction in stress levels, thus enhancing their psychological well-being (Ullah, 2017). In our study, conscientiousness was shown to have a significant positive predictor relationship with SWB as well. Highly conscientiousness people perform tasks efficiently and thoroughly which brings them more material and psychological rewards like a sense of purpose which contribute to a sense of subjective well-being (Soto; 2015). When an individual is open to new experiences, they are more appreciative of new ideas and more adaptable to new situations. Since life conditions are forever changing, such people are more likely to experience higher levels of psychological well-being (Ullah, 2017). Thus, explaining the link between openness to experience and PWB in this study. As far as emotional stability is concerned which was seen to have a significant positive predictor relationship with PWB, our results are in line with the existing research, which concludes that as emotional stability increases so does PWB (Diener & Seligman, 2002; Singh & Singh, 2009; Ullah, 2017). This is because this trait may affect an individual's susceptibility to psychological distress through neurobiological risk factors or due to certain behaviours or thoughts that influence someone's vulnerability to distress (Duggan et al., 2003; Foster & MacQueen, 2008). Interestingly, the dimension of extraversion was found to have a significant negative predictor relationship with SWB for our sample. This is in contrast to the existing research, which establishes that highly extrovert individuals experience a greater satisfaction with life and less frequent negative affect (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008; Luhmann & Eid, 2009). A possible reason for this contradictory result in our study may be because of the fact that voicing opinions and being outspoken is not encouraged in a military set up. Soldiers are expected to follow the orders of their superiors

without question. Being highly extrovert in such an environment might lead to some form of disciplinary action, which will lead to a reduction in the experience of SWB for the soldier.

Leadership

When it comes to the effect of leadership on the well-being levels, it was found in our analysis that there is a very high positive predictor relationship between leadership and its impact on the SWB of the soldiers. No significant relationship could be established as far as PWB and leadership is concerned in our sample. Even though there is no readily available supportive research in this regard on a military sample but the general evidence lends support to our study as far as SWB is concerned (Kelloway, Weigand, McKee, & Das, 2013; Rahimnia & Sharifirad, 2015; Skakon, Nielson, Borg, & Guzman, 2010; Donaldson-Feilder, Munir, & Lewis, 2013). The results make sense because leaders have an incredible impact on the soldiers and their lives because of the nature of a military job. It is practically a relationship of life and death and thus how a soldier perceives his leadership has a profound impact on how positively or negatively he feels about and evaluates his life to be which has been proven from this study. Even though there is supportive evidence that employee wellbeing is affected by leadership, the exact mechanisms underlying how it actually happens remain unclear. This question remains unaddressed (Skakon et al., 2010; Arnold, 2017). In this sample of military personnel one possible reason that no significant causal relationship was found between PWB and leadership could be because of the fact that the dimensions of PWB like autonomy, environmental mastery, personal growth, positive relations, purpose in life and self acceptance are governed to a great extent by the strict regimented system of military. It is stronger than and above any one leader. The leader is also expected to follow the dotted line of the rules and regulations. Hence the finding in regard to PWB and leadership.

Resilience

The next protective factor whose effect was studied on the SWB and PWB of the soldiers is resilience. A strong positive predictive relationship was established between resilience and SWB in the soldiers. No significant relationship between resilience and PWB could be found in our study. The current status of literature supports our findings where resilience and SWB have already been proven to have a positive correlational relationship (He et al., 2013; Tecson, Wilkinson, Smith, & Mi Ko, 2019; Satici, 2016; Zubair, Kamal & Artemeva, 2018). The findings fit in perfectly well because they confirm the fact that to survive a hard life as a soldier and to feel satisfied with it an individual should possess a certain level of resilience. Since a resilient person will be able to bounce back from the stresses and possible trauma of being in such a job on an everyday basis he will be able to feel more positive about his life than someone who is not able to cope with the challenges of a military life. Thus, explaining why resilience is a strong positive predictor for SWB in a soldier's life.

Unit Cohesion

The unit/group is an indispensable part of a soldier's life since he spends the maximum time of his duty and off duty hours with his colleagues. Thus, the climate of this group will impact a soldier in a significant way. This study measured group cohesion on three dimensions of group engagement, avoidance and conflict. The results indicated that group engagement promoted both SWB and PWB. This is in line with the most of the past findings. In the context of the soldiers, the unit acts as a primary group and if the group climate is engaging it will boost the feelings of life satisfaction and psychological well-being. The research literature also lends merit to this finding in non-military samples (Kuykendall, Tay, & Ng, 2015; Fancourt & Steptoe, 2018; Schueller & Seligman, 2006; Shuck, Shuck & Reio, 2013; Binning et al, 2009).

Furthermore, results also indicated that group conflict had a negative impact on PWB. This is also very evident and in line with many past findings (Driscoll, Brough, & Kalliath, 2004; Enehaug, Helmersen, & Mamelund, 2016). Interestingly, group avoidance was found to have a significant positive relationship with SWB. This is in contrast to the limited research literature that is available regarding avoidance and SWB (Elliot, 1997; Tamir, 2008). There is not enough evidence either on military or non- military samples to put this finding in perspective. However, it is possible that avoidance is being used as a buffer against the stress caused by unwanted/unpleasant characters of the group. Since the soldier does not have a choice in terms of which unit he is put in or the soldiers he has to work with in his duty hours, avoidance of certain situations/people at certain times can help him cope better leading to an increase in SWB. No significant relationship could be established between avoidance and PWB in our study.

6.4 Moderator Factors for Indian Soldier's Subjective and Psychological Well-being

Social isolation, group engagement, and SWB

The moderation analysis revealed that group engagement moderated the relationship between social isolation and SWB. More specifically, it showed that group engagement dampens the negative relationship between Social isolation and SWB after controlling the effects of education, age, rank and experience levels in the sample. In other words, engaging in a group helps to reduce the negative impact of social isolation (perceived loneliness) on SWB of the soldiers.

This finding gathers support from other similar studies from Hombrados-Mendieta, Garcia-Martin & Jacinto (2013), Vozikaki et al., (2017), Shankar (2015), Brailey et al. (2007), Smith et al.(2014), Levin & Madfis (2009) etc, all of which report the importance of social engagement in reducing loneliness and a healthy effect on SWB across a range of samples. This could be a significant finding in the context of soldier in terms of possible intervention.

Death anxiety, Resilience and SWB

This study revealed that the resilience moderated the relationship between death anxiety and SWB. More specifically, the resilience dampens the negative relationship between Death anxiety and SWB. In other words, resilience helps to reduce the negative impact of death anxiety on SWB of the soldiers. Resilience is the ability of an individual to bounce back from stressful situations. Death anxiety is an ever present stressor in a soldier's life, which happens to be one of the most serious stressors that an individual can experience. Thus, resilience is one of the most significant personal resource that can promote SWB by managing death anxiety as is evident from the results of this study. It remains to be answered as to how the process of it actually happens since this particular variable has not been explored in detail in context of death anxiety. But indirect support to this possible link comes from studies which prove that the formation of attitudes and beliefs surrounding death results from personal experiences and environmental events, with gender, age, and developmental stage contributing to individualized differences over time (Tavakoli & Ahmadzadeh, 2011). Continuous exposure to death in healthy individuals may have negative consequences on physical health and mental well-being (Harrawood, White, & Benshoff, 2009; Kroshus, Swarthout, & Tibbetts, 1995). However, some individuals when reminded of their own mortality may strive for more meaningful and structured lives coincident with individualized values and goals (Furer &

Walker, 2008). Culture and personal self-esteem both serve as buffers against death anxiety (Arndt et al., 1997; Vance, 2014). Personal and cognitive frameworks from which individual attitudes toward death and dying are formulated and interpreted broadly through cultural, societal, philosophical, and religious belief systems (Langs, 2003; Neimeyer, 1994). Individuals may be positively affected in terms of death anxiety by interpersonal communication and culturally constructed meanings (Chung, Chung, & Easthope, 2000). In a nutshell it may be concluded that if or as the concept of personal death becomes integrated into core cognitive structures, death may not be considered as threatening (Lehto, 2012). Even though these studies have not been necessarily conducted on military samples but their relevance and applicability to our sample can not be denied since a soldier just like a civilian is a product of factors like religion, culture, and society.

Leadership, Death anxiety, and SWB

This study revealed that the leadership moderated the relationship between death anxiety and SWB. More specifically, leadership dampens the negative relationship between Death anxiety and SWB. In other words, leadership helps to reduce the negative effect of death anxiety on SWB of the soldiers. This finding confirms the importance of leadership/leader follower relationship in a soldier's life. Such a relationship is very different from the usual leader-follower relationships found in civilian professions because it is a relationship where matters of life and death are involved. So it makes perfect sense if leadership (that is perceived positive) helps to reduce death anxiety and has a positive impact on the life satisfaction of SWB levels of the soldiers. Even though no direct evidence in support of this finding could be gathered from existing research literature, individually both death anxiety and leadership have been

found to have a strong relationship with SWB (Steffens et al, 2014; Nielson, Randall, Yarker, & Brenner, 2008; Van Dierendonck, Haynes, Borrill, & Stride, 2004).

Group engagement, occupational stress and SWB

This study revealed that the group engagement moderated the relationship between occupational stress and SWB. More specifically, group engagement dampens the negative relationship between Occupational stress and SWB. In other words, engaging in a group reduces the negative impact of occupational stress on SWB of the soldiers. Unit/group serve as a primary support network especially in the absence of family where the soldier spends his maximum time either working or relaxing. Thus, group engagement is a strong moderator not just in the relationship between social isolation and SWB but also with occupational stress and SWB in our sample. Supportive research findings in the context of a military setting could not be found but certain studies with similar objectives point towards the same direction like Tuisku et al. (2016), Salanova & Schaufeli (2008), Newman, Tay & Diener (2014), Kukyendall, Tay & Ng (2015), Pestonjee & Shweta (2000); Brailey et al. (2007) etc. The results obtained from these studies validate our results.

6.5 Contributions, Context Specific Novel Findings, and Implications

One of the most significant contributions of this thesis is the development and validation of new scale *"Occupational Stress Scale for Soldiers"* (OSSS). Results showed a modest reliability and validity of the scale. To the best of our knowledge, there are no existing scales available to measure occupational stress for Indian Army soldiers especially with regard to the everyday life of a soldier. This scale will be a new addition to the literature of military

psychology. This scale can also be used for services other than the Army like Air Force, Navy, Police, BSF, CRPF, ITBP and other paramilitary forces where the serving/job conditions are similar to that of the Army. Furthermore, the factor structure of the scale provided insights into the significant dimensions of occupational stress experienced by the soldiers. The dimensions included personal, job related, administrative, and group related stressors. The result indicated that the soldiers reported stressors of all dimensions. However, they reported highest stress in the dimensions of job related and individual/personal stressors. This finding is significant and authorities can use it for making interventions for soldier's well-being.

In addition, results of the theoretical model testing provided significant insights into the risk, protective and moderator factors for a soldier's subjective and psychological well-being. This is also a novel addition to the literature, as there are negligible empirical studies exploring factors affecting Indian Army soldier's well-being. In the risk factors model it was clearly established that occupational stress and social isolation have a significant negative predictor relationship with SWB and PWB. What was interesting to note is that death anxiety was found to have a highly significant negative predictor relationship with SWB which was expected and in line with the research done on other populations. But death anxiety was found to have a positive predictor relationship with PWB in the soldiers which is unusual. In the protective factors model, the personality trait of extraversion was found to be a significant negative predictor of SWB. This is in contrast to the existing literature on civilian populations. The other personality dimensions of agreeableness, conscientiousness, openness to experience and emotional stability were found to have significant positive predictor relationships with SWB and PWB. The quality of leader-follower relationship and resilience both predicted SWB positively. Another interesting find in this model was the significant positive predictor relationship between group avoidance and SWB. The other dimensions of group cohesion like engagement and conflict predicted positive predictor relationships for both SWB and PWB and

a negative predictor relationship with PWB respectively keeping in line with the expected findings from earlier studies. The moderator factors model confirmed that group engagement, resilience and leadership (quality of leader-follower relationship) were significant (negative) moderators when it comes to social isolation, death anxiety and occupational stress and SWB. The implications of these findings lie in them being used for framing ground level policies for the soldiers. The understanding of the risk, protective and moderator factors that are at work in the routine life of a soldier can greatly help in providing the necessary support system to reduce the impact of negative factors and promote the positive ones when it comes to the SWB and PWB of the soldiers.

Policies that may reduce occupational stress and increase well-being

Item analysis of OSSS, and factors from the model testing revealed many important insights that can be used for policy making. Some practical and concrete steps through which it can be done (and is already being done to some extent) is the by the time tested, long established system of unit routine which inculcates, develop and maintain the regimental spirit in a soldier and help all ranks to form a cohesive group . This traditional unit routine starts with early morning physical training followed by equipment / weapon maintenance. During daytime there is weapon / equipment training which is followed by group games in the evening which are played together by officers and soldiers. It keeps a soldier physically fit, professionally competent and help him become a useful member of a group. Coupled with this rigorous routine, unit military leadership ensures the fulfilment of material / physical and psychological needs of the soldier thereby making him feel part of a one big family called "Unit" or "Paltan". This routine should be followed meticulously. For this, authorities need to avoid frequent and long duration deployment of our soldiers in duties that do not form part of

their prime responsibility. Provisioning of more married accomodation and educational facilities for the wards of the soldiers would go a long way to enhance their sense of well-being. Adequate pay and pension packets at par with other services also ought to be looked into. Since service conditions ensure early retirement of the soldiers, post retirement rehabilitation of this trained and disciplined man power would be a boon to our civil establishments and help raise morale of our soldiers. Last but not the least, there is a strong requirement of ensuring grant of quick and adequate family pension to the families of those soldiers who have sacrificed their lives while serving their motherland. Present bureaucratic trend of filing court cases on flimsy grounds to contest the grant of meagre pensions to the family of our slain soldiers must be stopped. Huge numbers of such cases in various courts are a common knowledge. They sap the mental strength of a soldier who is not sure how his family would fare if he is killed in action.

Resilience training for the Army

The sense of resilience is very important for the civilian and especially for the defence personnel because of the nature of their job. This study also revealed the protective role of resilience in SWB of soldiers. In general, reducing the exposure to risk factors and increasing the exposure to protective factors is likely to increase well-being and resilience. However, specific training modules can be developed based on the findings from the literature of positive psychology and other areas. In fact, countries like USA has already introduced such training programs few years back. Two of the most promising ones are the Master Resilience Training (MRT) and R2 (Strengthening Readiness and Resilience Campaign). Master Resilience Training (MRT) is “a 10-day program of study that teaches resilience skills to noncommissioned officers” which has been offered in the United States Army since 2009

(Reivich & Seligman, 2011). MRT is an aspect of the United States Army's broader Comprehensive Soldier Fitness program (Reivich & Seligman, 2011). The program consists of three different components: preparation, sustainment and enhancement. An important goal of the program is to teach these officers how to teach the program's skills to other soldiers. Over 95% of participants said they found themselves using skills they learned in MRT both on the job and in their personal lives (Bryan et al., 2013). R2 takes the responsibility of building routines and relationships amongst the soldiers to foster a culture of trust so that soldiers are motivated to seek guidance whenever needed. Leaders who model the right behaviours and give importance to cultivating strong relationships with the soldiers positively influence personal and unit readiness. The objectives of this program are: a) sustained personal readiness to meet operational requirements b) a values based organization of trusted Army professionals c) enhanced visibility of personal readiness throughout career d) management that enables personal readiness (Patton et al., 2018). If programs on similar lines are introduced for the Indian Army, then they will yield immense benefit to our soldiers.

6.6 Limitations of the research

This study has some limitations. It shares the limitations of cross-sectional research such as difficulty in establishing causal relationships. Furthermore, all the commands of the Army were not uniformly represented in the sample. The sample was subject to availability. Same is true for the various rank categories of the soldiers.

6.7 Future Directions

The future research should further establish the reliability and validity of OSSS developed as a part of the thesis. The future direction of research in this area should focus on further exploring some of the novel and counterintuitive findings of the study such as the relationship between death anxiety and well-being. The role of resilience in alleviating death anxiety in a soldier's life also needs to be explored further for better understanding. In addition, specific coping strategies (both healthy and unhealthy) should be explored to understand their dynamics in soldier's well-being.

It would also be important to understand in detail from a military point of view, as to how leadership and resilience aid in reducing the negative impact of death anxiety on the SWB of the soldiers. Comparative studies that take into account age, rank and commands to understand the differences between SWB and PWB of soldiers can also contribute tremendously to our understanding of this sample. These domains remain unexplored in military population and thus need to be worked upon. Future research can use qualitative and longitudinal research methods to get more insights in this direction.

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APPENDIX

Consent Form

The following information is being collected by Ms. Shivali Kashyap, Ph.D scholar from Indian Institute of Technology, Guwahati for the purpose of her thesis titled "A risk and protective factors framework for understanding Indian Army soldier's subjective and psychological well-being". The study aims to explore the various factors that affect the well-being of the soldiers in the Indian Army and thus you have been approached to participate in it. Your input will be truly beneficial for the success of this project.

Instructions:

- The data collected during the course of this study **will be kept strictly confidential**
- You are **not required to mention your name, number or unit anywhere while filling up the questionnaires** so you can be totally confident that no information will be used against you in any way
- Your participation in the study will be voluntary and by your own free will
- You can leave any question unanswered which you feel is not appropriate or you do not wish to answer
- You are free to leave the study any time if you choose not to participate any longer. Your decision will be respected
- In case you have any doubt about any of the questions, please feel free to ask and clarify it
- There are **no right or wrong answers** for any of the questions. You should choose the option that describes you the best

If you have understood the instructions and are willing to participate in the study, kindly read the undertaking below and sign it with your initials (**No names needed**).

I have read and understood the purpose and instructions of the study. I willingly give my consent to participate in the study.

…….. (Signature/Initials) (**Full name not to be mentioned please**)

…….. (Date)

I greatly appreciate you spending your valuable time and sharing important information for the successful completion of this project. My sincere regards to you. Thank you

Shivali Kashyap

Email: shivali.k1987@gmail.com

SECTION A: Please tick the following information as applicable to you.

1. Age : **Below 20** / **20-25** / **25-30** / **30-35** / **35-40** / **40+ years**
2. Educational Qualification : **Below Matric** / **Matric** / **10+2** / **Graduate** / **Post Graduate**
3. Rank : **Sep** / **NK** / **Hav** / **Nb Sub** / **Sub**
4. Years of service in Army :**1-5** / **5-10** / **10-15** / **15-20** / **20+ years**
5. Arms / Services : **Inf** / **Armd** / **Arty** / **AAD** / **Signals** / **Engrs** / **EME** / **ASC** / **Ord** /**AMC** / **Others**
6. Why did you join the Army? **(Please tick your main reason)**
   a. First available job
   b. Patriotism
   c. Pay and benefits in and after service
   d. Last option when none else was available
   e. Any other reason

Please indicate your degree of agreement (using a score ranging from 1- 6) to the following sentences

S. No	Statements	Strongly disagree	→				Strongly agree
1	I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	**1**	**2**	**3**	**4**	**5**	**6**
2	In general, I feel I am in charge of the situation in which I live.	**1**	**2**	**3**	**4**	**5**	**6**
3	I am not interested in activities that will expand my horizons.	**1**	**2**	**3**	**4**	**5**	**6**
4	Most people see me as loving and affectionate.	**1**	**2**	**3**	**4**	**5**	**6**
5	I live life one day at a time and don't really think about the future.	**1**	**2**	**3**	**4**	**5**	**6**
6	When I look at the story my life, I am pleased with how things have turned out.	**1**	**2**	**3**	**4**	**5**	**6**
7	My decisions are not usually influenced by what everyone else is doing.	**1**	**2**	**3**	**4**	**5**	**6**
8	The demands of everyday life often get me down.	**1**	**2**	**3**	**4**	**5**	**6**
9	I think it is Important to have new experiences that challenge how you think about yourself and the world.	**1**	**2**	**3**	**4**	**5**	**6**
10	Maintaining close relationships has been difficult and frustrating for me.	**1**	**2**	**3**	**4**	**5**	**6**

11	I have a sense of direction and purpose in my life.	**1**	**2**	**3**	**4**	**5**	**6**
12	In general, I feel confident and positive about myself.	**1**	**2**	**3**	**4**	**5**	**6**
13	I tend to worry about what other people think about me.	**1**	**2**	**3**	**4**	**5**	**6**
14	I do not fit very well with people and the community around me.	**1**	**2**	**3**	**4**	**5**	**6**
15	When I think about it, I haven't really improved much as a person over the years.	**1**	**2**	**3**	**4**	**5**	**6**
16	I often feel lonely because I have few close friends with whom to share my concerns.	**1**	**2**	**3**	**4**	**5**	**6**
17	My daily activities often seem trivial and unimportant to me.	**1**	**2**	**3**	**4**	**5**	**6**
18	I feel like many of the people with strong opinions.	**1**	**2**	**3**	**4**	**5**	**6**
19	I tend to be influenced by people with strong opinions.	**1**	**2**	**3**	**4**	**5**	**6**
20	I am quite good at managing the many responsibilities of my daily life.	**1**	**2**	**3**	**4**	**5**	**6**
21	I have the sense that I developed a lot as a person over time.	**1**	**2**	**3**	**4**	**5**	**6**
22	I enjoy personal and mutual conversations with family members or friends.	**1**	**2**	**3**	**4**	**5**	**6**
23	I don't have a good sense of what it is I'm trying to accomplish in life.	**1**	**2**	**3**	**4**	**5**	**6**
24	I like most aspects of my personality.	**1**	**2**	**3**	**4**	**5**	**6**
25	I have confidence in my opinions, even if they are contrary to the general consensus	**1**	**2**	**3**	**4**	**5**	**6**
26	I often feel overwhelmed by my responsibilities.	**1**	**2**	**3**	**4**	**5**	**6**
27	I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	**1**	**2**	**3**	**4**	**5**	**6**
28	People would describe me as a giving person, willing to share my time with others.	**1**	**2**	**3**	**4**	**5**	**6**
29	I enjoy making plans for the future and working to make them a reality.	**1**	**2**	**3**	**4**	**5**	**6**
30	In many ways, I feel disappointed about my achievements in my life.	**1**	**2**	**3**	**4**	**5**	**6**
31	It's difficult for me to voice my opinions on controversial matters.	**1**	**2**	**3**	**4**	**5**	**6**

32	I have difficulty arranging my life in a way that is satisfying to me.	**1**	**2**	**3**	**4**	**5**	**6**
33	For me, life has been a continuous process of learning, changing and growth	**1**	**2**	**3**	**4**	**5**	**6**
34	I have not experienced many warm and trusting relationships with others.	**1**	**2**	**3**	**4**	**5**	**6**
35	Some people wander aimlessly through life, but I am not one of them.	**1**	**2**	**3**	**4**	**5**	**6**
36	My attitude about myself is probably not positive as most people feel about themselves.	**1**	**2**	**3**	**4**	**5**	**6**
37	I judge myself by what I think is important, not by values of what other think is important.	**1**	**2**	**3**	**4**	**5**	**6**
38	I have been able to build a home and a lifestyle for myself that is much to my liking.	**1**	**2**	**3**	**4**	**5**	**6**
39	I gave up trying to make improvements or changes in my life a long time ago.	**1**	**2**	**3**	**4**	**5**	**6**
40	I know that I can trust my friends, and they know they can trust me.	**1**	**2**	**3**	**4**	**5**	**6**
41	I sometimes feel as if I've done all there is to do in life.	**1**	**2**	**3**	**4**	**5**	**6**
42	When I compare myself to friends and acquaintances, it makes me feel good about who I am.	**1**	**2**	**3**	**4**	**5**	**6**

SECTION B: Here are a number of personality traits that may or may not apply to you. Please tick the number box next to each statement to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies to you, even if one characteristic applies more strongly than the other.

S.No	Statement **"I see myself as"**	Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	Extraverted, enthusiastic	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Critical, quarrelsome	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	Dependable, self- disciplined	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	Anxious, easily upset	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5	Open to new experiences, complex	**1**	**2**	**3**	**4**	**5**	**6**	**7**
6	Reserved, quiet	**1**	**2**	**3**	**4**	**5**	**6**	**7**
7	Sympathetic, warm	**1**	**2**	**3**	**4**	**5**	**6**	**7**
8	Disorganized, careless	**1**	**2**	**3**	**4**	**5**	**6**	**7**
9	Calm, emotionally stable	**1**	**2**	**3**	**4**	**5**	**6**	**7**
10	Conventional, uncreative	**1**	**2**	**3**	**4**	**5**	**6**	**7**

SECTION C: Please read each of the following statements and tick a number 0, 1, 2, 3 that indicates how the statement applies to you. **There are no right or wrong answers.**

0 - Does not apply to me at all (NA)

1 - Applies to me to some degree or some of the time (Sometime)

2 - Applies to me to a considerable degree or a good part of time (No of times)

3 - Applies to me very much or most of the time (Most of the times)

S.No	Statements	NA	Sometimes	No of Times	Most of the times
1	I feel I may be rejected as a useful member of the team/group	**0**	**1**	**2**	**3**
2	I stay away from my family and relatives for long durations of time	**0**	**1**	**2**	**3**
3	I am able to look after the needs of my family	**0**	**1**	**2**	**3**
4	I experience performance anxiety in my regular professional tasks	**0**	**1**	**2**	**3**
5	I feel anxious about the consequences for not performing the task properly	**0**	**1**	**2**	**3**
6	I feel 24x7 duty hours lead to little or no personal time	**0**	**1**	**2**	**3**
7	Short career span due to early retirement concerns me	**0**	**1**	**2**	**3**
8	I feel I have less social status in comparison to other uniformed services	**0**	**1**	**2**	**3**
9	My efforts and sacrifices are recognized and appreciated by the society	**0**	**1**	**2**	**3**
10	I feel I am over qualified for my job	**0**	**1**	**2**	**3**

S.No	Statements	NA	Sometimes	No of Times	Most of the times
11	I get adequate time for completing the tasks assigned to me	**0**	**1**	**2**	**3**
12	There are no assured avenues for post-retirement engagement for me	**0**	**1**	**2**	**3**
13	I am concerned about financial insecurities after retirement	**0**	**1**	**2**	**3**
14	My efforts are recognized and appreciated by the higher authorities	**0**	**1**	**2**	**3**
15	I feel I can share personal problems with colleagues	**0**	**1**	**2**	**3**
16	It concerns me that officers with equal qualifications are occupying much higher status	**0**	**1**	**2**	**3**
17	I have enough facilities and privacy for a comfortable living	**0**	**1**	**2**	**3**
18	I feel I get my promotion when it is due	**0**	**1**	**2**	**3**
19	I feel apprehensive about malfunctioning of weapons during critical situations	**0**	**1**	**2**	**3**
20	I feel my personal ambitions are being fulfilled in the army	**0**	**1**	**2**	**3**
21	I feel that my personal strengths/skills are not being utilized properly in my place of work	**0**	**1**	**2**	**3**
22	My organization takes enough care in matters of food, rest, accommodation and family welfare	**0**	**1**	**2**	**3**
23	I feel there is adequate compensation and rehabilitation provided after injuries	**0**	**1**	**2**	**3**
24	I have been adequately trained for extra duties like disaster relief etc.	**0**	**1**	**2**	**3**
25	I get adequate personal safety equipments wherever needed	**0**	**1**	**2**	**3**
26	I get adequate infrastructural and logistical support for medical emergencies in operational areas	**0**	**1**	**2**	**3**
27	I feel there is a proper mechanism for soldier grievances in the organization	**0**	**1**	**2**	**3**
28	I feel there is transparency in the functioning of the administration	**0**	**1**	**2**	**3**

S.No	Statements	NA	Sometimes	No of Times	Most of the times
29	There is adequate trust and bonding between me and my seniors	**0**	**1**	**2**	**3**
30	I feel certain about getting leave during personal or family emergencies	**0**	**1**	**2**	**3**
31	I feel I can express my views freely in front of authorities	**0**	**1**	**2**	**3**
32	I get technically advanced weapons to meet challenging situations	**0**	**1**	**2**	**3**
33	I find the routine professional tasks repetitive and unfulfilling	**0**	**1**	**2**	**3**
34	Proper training has been given to me for the tasks assigned to me	**0**	**1**	**2**	**3**
35	I get adequate guidance and support for task completion by my senior	**0**	**1**	**2**	**3**
36	I am satisfied with the working environment	**0**	**1**	**2**	**3**
37	I feel I am treated with dignity as a sahayak (Aide)	**0**	**1**	**2**	**3**

SECTION D: If a statement is True or mostly True as applied to you, circle "T". If a statement is False or mostly False as applied to you, "F".

1.	I am very much afraid to die	T	F
2.	The thought of death seldom enters my mind	T	F
3.	It doesn't make me nervous when people talk about death	T	F
4.	I dread to think about having to have an operation	T	F
5.	I am not at all afraid to die	T	F
6.	I am not particularly afraid of getting cancer	T	F
7.	The thought death never bothers me	T	F
8.	I am often distressed by the way time flies so very rapidly	T	F
9.	I fear dying a painful death	T	F
10.	The subject of life after death troubles me greatly	T	F
11.	I am really scared of having a heart attack	T	F
12.	I often think about how short life really is	T	F
13.	I shudder when I hear people talking about a World War III	T	F
14.	The sight of a dead body is horrifying to me	T	F
15.	I feel that the future holds nothing for me to fear	T	F

SECTION E: This questionnaire contains items that ask you to describe your relationship with your leader. For each of the items, indicate the degree to which you think the item is true for you by circling one responses that appear below the item.

1. Do you know where you stand with your leader and **do you usually know how satisfied your leader is with what you do?**

Rarely	Occasionally	Sometimes	Fairly often	Very often
1	2	3	4	5

2. How well does your leader understand your job problems and needs?

Not a bit	A little	A fair amount	Quite a bit	A great deal
1	2	3	4	5

3. How well does your leader recognize your potential?

Not at all	A little	Moderately	Mostly	Fully
1	2	3	4	5

4. Regardless of how much formal authority your leader has built into his or her position, **what are the chances that your leader would use his or her power to help you solve problems in your work?**

None	Small	Moderate	High	Very High
1	2	3	4	5

5. Again, regardless of amount of formal authority your leader has, **what are the chances that he or she would "bail you out" at his or her expenses?**

None	Small	Moderate	High	Very High
1	2	3	4	5

6. I have enough confidence in my leader that **I would defend and justify his or her decision if he or she were not present to do so.**

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

7. How would you characterize your relationship with your leader?

Extremely Ineffective	Worse than average	Average	Better than average	Extremely effective
1	2	3	4	5

SECTION F: Please select the option that describes you most appropriately

Please respond to each item by marking one box per row		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I tend to bounce back quickly after hard times.	**1**	**2**	**3**	**4**	**5**
2	I have a hard time making it through stressful events.	**5**	**4**	**3**	**2**	**1**
3	It does not take me long to recover from a stressful event.	**1**	**2**	**3**	**4**	**5**
4	It is hard for me to snap back when something bad happens.	**5**	**4**	**3**	**2**	**1**
5	I usually come through difficult times with little trouble.	**1**	**2**	**3**	**4**	**5**
6	I tend to take long time to get over set-backs in my life	**5**	**4**	**3**	**2**	**1**

SECTION G: Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your agreement with each item by ticking the appropriate number. Please be open and honest in your responding.

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
In most ways my life is close to my ideal.	1	2	3	4	5	6	7
The conditions of my life are excellent.	1	2	3	4	5	6	7
I am satisfied with my life.	1	2	3	4	5	6	7
So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

SECTION H: Read each statement carefully and as you answer the questions think of the group as a whole (your unit members). For each statement fill in the box under the **MOST APPROPRIATE** heading that best describes the group during the last four meetings/interactions. **Please mark only ONE box for each statement**

	Not at all (0)	A little bit (1)	Somewhat (2)	Moderately (3)	A Quiet a Bit (4)	A Great Deal (5)	Extremely (6)
1. The members liked and cared about each other …….							
2. The members tried to understand why they do the things they do, tried to reason it out…							
3.The members avoided looking at important issues going on between themselves……							
4. The members felt what was happening was important and there was a sense of participation…….							
5. The members depended upon the group leader(s) for direction……..							
6. There was friction and anger between the members……							
7. The members were distant and withdrawn from each other……							
8. The members challenged and confronted each other in their efforts to sort things out…							
9. The members appeared to do things the way they thought would be acceptable to the group……..							
10. The members rejected and distrusted each other……..							
11. The members revealed sensitive personal information or feelings…..							
12. The members appeared tense and anxious……							

SECTION I: Indicate how often each of the statements below is descriptive of you.

Statements	Never	Rarely	Sometimes	Often
1. How often do you feel that **you are "in tune" with the people around you?**	**1**	**2**	**3**	**4**
2. How often do you feel that **you lack companionship?**	**1**	**2**	**3**	**4**
3. How often do you feel that **there is no one you can turn to?**	**1**	**2**	**3**	**4**
4. How often do you feel **alone?**	**1**	**2**	**3**	**4**
5. How often do you feel **part of a group of friends?**	**1**	**2**	**3**	**4**
6. How often do you feel **that you have a lot in common with the people around you?**	**1**	**2**	**3**	**4**
7. How often do you feel **that you are no longer close to anyone?**	**1**	**2**	**3**	**4**
8. How often do you feel **that your interests and ideas are not shared by those around you?**	**1**	**2**	**3**	**4**
9. How often do you feel **outgoing and friendly?**	**1**	**2**	**3**	**4**
10. How often do you feel **close to people?**	**1**	**2**	**3**	**4**
11. How often do you feel left out?	**1**	**2**	**3**	**4**
12. How often do you feel **that your relationships with others are not meaningful?**	**1**	**2**	**3**	**4**
13. How often do you feel **that no one really knows you well?**	**1**	**2**	**3**	**4**
14. How often do you feel **isolated from others?**	**1**	**2**	**3**	**4**
15. How often do you feel **you can find companionship when you want it?**	**1**	**2**	**3**	**4**
16. How often do you feel **that there are people who really understand you?**	**1**	**2**	**3**	**4**
17. How often do you feel **shy?**	**1**	**2**	**3**	**4**
18. How often do you feel **that people are around you but not with you?**	**1**	**2**	**3**	**4**
19. How often do you feel **that there are people you can talk to?**	**1**	**2**	**3**	**4**
20. How often do you feel **that there are people you can turn to?**	**1**	**2**	**3**	**4**